MARINE REVIEW.

VOL. VI. CLEVELAND, OHIO, THURSDAY, OCTOBER 6, 1892. No. 14.

Lake Carriers' Association.

At a meeting of the finance committee of the association on Wednesday a new schedule of wages was adopted, to take effect Thursday, Oct. 6. That part of the schedule in which changes were made is now as follows:

ON STEAMERS.	PER MONTH.
Helpers	$15 00 to $20 00
Firemen	40 00 to 45 00
Wheelmen	40 00 to 45 00
Lookout	40 00 to 45 00
Deck hands	20 00 to 25 00
Oilers	40 00 to 45 00
ON CONSORTS AND SAIL.	
First mates	$50 00 to $65 00
Second mates	40 00 to 50 00
Cooks	35 00 to 45 00
Seamen	35 00 to 45 00
Boys	20 00 to 30 00

These rates of wages show an advance of $5.00 to $7.50 a month, and are fully up to previous seasons, when business was more profitable.

NEW LAKE LIGHT-SHIPS.

A committee from the Cleveland managers of the association, composed of Capt. George P. McKay, Harvey D. Goulder, and James Corrigan met with the light-house inspectors of the lakes, Commanders Woodward, Ludlow and Reed, in Detroit Monday, and made some recommendations regarding the new light-ships secured through appropriations from the last congress. It was agreed that from the Eleven-Foot shoal appropriation of $60,000 four light-ships without power should be built and located at Eleven-Foot shoal, Poverty passage, Peshtigo reef, and either Poe's reef or the shoals at the foot of Lake Huron. In the Detroit river two floating lights for the Lime-kiln crossing, to replace the present private lights, and a crew light-ship for Bar point are secured through appropriations designating these aids, and there is an additional appropriation of $8,400 for "three small light-ships for use in the Detroit river." From this appropriation of $8,400, in connection with which a mistake was made in providing for three lights, a small light-ship will be constructed at moderate cost to replace the present float-light at Ballard's reef, and the balance will be held in reserve. The committee's recommendations were formulated after a conference with the district officers, and are in full accord with the views of these officers.

At old Mackinaw point a new light station is about ready for service, and the association will recommend that a light be shown in it as soon as possible, in order to aid navigation in the Straits this fall.

Petitions requesting Secretary Foster to reinstate Col. Ludlow and Commander Heyerman are being circulated by the association in all parts of the lakes.

Iron Ore Shipments and Lake Freights.

Official reports regarding shipments of iron ore from all upper lake ports up to Oct, 1 can not be secured until next week, but with a knowledge of the actual shipments from all ports excepting Escanaba, a very good estimate of the total movement is 6,250,000 gross tons, against 5,066,860 tons on the same date in 1891 and 6,250,337 in 1890 when the season's full shipments were above 9,000,000 tons. From this it will be seen that the ore movement is very much ahead of expectations. The greatest gains are at Ashland and Two Harbors. The close of the present month will find Ashland shipments fully up to the entire movement of 1890, and Two Harbors has already shipped more ore than in any previous year.

A slow foreign demand for grain is, however, the greatest drawback to high fall freights. Farmers have been more active than any previous year in forwarding their grain, and statements of stocks at different points on Oct. 1 show big increases at Chicago and Duluth while Buffalo has received more grain up to this time than ever before during the same period. At four leading Atlantic ports, however, stocks of wheat alone foot up 14,448,014 bushels, or more than 5,000,000 bushels more than at this time in 1891. It is this lack of a foreign demand that restricts the lake movement of grain. The freight market has accordingly been only fairly active during the week, and at this writing grain rates are not strong at 2 cents on corn from Chicago and 3½ cents on wheat from Duluth to Buffalo, with ore freights $1.20 from Ashland and Two Harbors, $1 from Marquette and 75 cents from Escanaba to Ohio ports. The volume of coal shipments is large in comparison with previous years and there are no signs of any marked improvement in freights on cargoes bound up the lakes.

Work of the Ship Yards.

Abraham Smith at Algonac has begun work on a schooner for the Comstocks of Alpena. The new vessel will be 170 feet keel, 34 feet beam and 11 feet depth of hold. She is designed specially for the lumber trade.

Hurd & Hanenstein of Buffalo are figuring with different lake builders for a lumber steamer. The plans call for a boat 180 feet long and to carry 750,000 feet. Hubbell & Co., also of Buffalo, are figuring for a boat of similar dimensions and will probably give the contract to Rieboldt, Wolter & Co of Sheboygan. She will carry about 850,000 feet of lumber, and is intended to ply between Ashland and Buffalo.

The Detroit Dry Dock Company has built some very successful wooden boats for the Ogdensburg Transit Company, the lake line of the Vermont Central Railway, of which Mr. Frank Owen of Ogdensburg is manager. It is now said that the transit company is figuring with the dry dock company for two or three steel steamers, which will cost about $200,000 each, to replace the W. A. Haskell, Walter L. Frost and W. J. Averill, three wooden boats built in 1884.

General Manager John Gordon of the Northern Steamship and Lehigh Valley lines was in Cleveland Tuesday on his way to Buffalo from the northwest. Mr. Gordon found at the ship yard of the Globe Iron Works Company everything in readiness to go ahead with the building of the hulls of the big Northern line passenger boats. Keel blocks and scaffolding are all arranged and a large part of the material is in shape for erection. As regards the construction of the big engines of 6,000 horse power each, however, the progress of work will not be so rapid. No such machinery has ever before been built in this part of the country, and it will be some time before the plans of engines are complete.

The steamer James B. Colgate, launched by the American Steel Barge Company at Superior last week, was the ninth whaleback freight vessel turned out by that company within a year, the capacity of the boats averaging not less than 2,300 gross tons each. The story sent out from Chicago about a fleet of whalebacks competing next season with the boats between Chicago and Buffalo was probably based on the fact that the barge company has now under way two boats designed for the flour trade. These two boats are not liable, however, to revolutionize the business of the Buffalo-Chicago line boats. These with the world's fair passenger steamer are the only boats now building by the barge company. The world's fair boat will be named Superior. During service at the fair the whaleback hull of this boat will be ballasted with water. The hull is fitted with gangways, and is intended for package freight business when the immense cabins are taken off after the fair.

Shipments of anthracite coal from Buffalo this season up to and including Sept. 30 aggregate 1,797,959 net tons, against 1,623,370 net tons on the corresponding date in 1891, or a gain of 174,585 tons. September shipments were 377,512 net tons.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 13 Western Union Building, CHICAGO, Ill., Oct. 6.

The fight between the tug men and the Society for the Prevention ef Smoke has come to an end by the tugs all being forced to burn hard coal Wednesday morning. There are fifty of them engaged in general towing here, and the increase in bills for fuel is very heavy. It is likely that the tugs will lose money on the balance of the season's business. If the smoke society would but show the same energy in prosecuting the numberless other offenders something might really be done in ending the smoke nuisance. The justice of the peace before whom the suits were tried fined the smoking locomotives $5, but nothing less than $50 would do in a tug case. The locomotives are just as bad as they ever were, but no one believes that the society will do anything with them. The railroad men have a bigger pull with the society than the tug men, und will be let down easy. As it now is, the river interest is the only one in all Chicago which is making a serious move to stop smoke.

Although there is not a vessel owner around the lakes but would prefer having their boats loaded at South Chicago instead of in the crowded south branch of Chicago river, vessel agents hold steadily against any difference in rates between South Chicago and here. There is at least a natural difference of an eighth of a cent a bushel, and on some cargoes a quarter. Agents state that it would be unwise to make different figures between the two ports. Counselman & Co., owners of the South Chicago elevator, are leaving nothing undone to get lower freights, and in the end vesselmen may be compelled to grant their demands.

It now seems likely that the city will build a hydraulic lift bridge at South Halstead street. The council virtually ordered it last Monday night. This bridge acts on the principle of an elevator, and is lifted on supports placed on each side of he river, above the top of the highest boat. The estimates are for a cost of $145,000.

Capt. Wiley M. Eagan has been attending the session of the Grand Lodge of Masons here this week. It was in 1856 that Capt. Egan attended his first grand lodge, aud he has been going to its sessions ever since.

John Gordon, the general manager of the Northern Steamship and Lehigh Valley lines, was in the city Monday on his way home from St. Paul. Mr. Gordon had a very cordial greeting from his associates of the time when he was Chicago agent of the Anchor Line. He seemed satisfied with the way things were going in Chicago, and intimated that E. J. Henry would continue to be the Lehigh Valley's agent here. He will be back again on a short trip in about a week.

A Qualifying Statement Needed.

EDITOR MARINE REVIEW:—A copy of your influential and widely circulated journal of the 29th ult. has reached me in this city, and I note that in its leading editorial article, under the head of "Demanding Standard Systems of Inspection", the following "broad" statement is attributed to me, viz: "That there is not another steel vessel on the lakes, under construction or in commission, that would be given in present condition, a classification under the rules of the American Shipmaster's Association."

The gentlemen who attempted to quote me in this statement undoubtedly intended to be correct, but failed to add the qualifying clause, viz: "Without a careful examination of the proportions and survey of the scantlings of which such vessels are composed." I therefore respectfully submit that, wanting this qualifying clause your article does me an injustice, in that I am made to appear as believing that there are many weak and light vessels engaged in lake commerce, and that I am willing to speak with asperity of other people's property. Such a conclusion and statement on my part is not justified by any actual knowledge of the facts. That there are many excellent steam vessels of iron, steel and wood engaged in the lake service, is without question; and to have them all reflected upon by the "broad" statement referred to, would be flagrant injustice to their owners, as well as to the American Shipmasters' Association, which I have the honor to represent.

While the appalling loss of life and property in the Western Reserve case should not pass without the gravest consideration, it should be borne in mind that with increased skill among marine architects, engineers and ship builders, there is no great or insurmountable difficulty in adequately strengthening any metallic ship by the addition of comparatively a few tons of material; especially, if the same is distributed with proper consideration and with reference to the proportion of the vessel and the cords of strain exerted in each particular case.

Believing that the publication of this will meet with your approval, as well as with your known spirit of fairness, I am with great respect,

E. PLATT STRATTON,

The Richelieu, Michigan Avenue Boulevard,
Chicago, October 3, 1892.

Millions of Logs—Lake Rafting Business.

With the opening of the next session of Congress the vessel ownels of the lakes will try to secure a settlement of the vexed log towing question. They will meet with decided opposition from the lumber interests, but it is more than probable that a bill of some kind regulating raft towing will be passed. On the Atlantic coast a few large rafts have been moved long distances with more or less success of late years, but nowhere in this country has the business reached such proportions as on the lakes.

About 160,000,000 feet of logs have been rafted from the Georgian bay district across Lake Huron to Michigan saw mills this season, and Mr. Roys, of the Michigan Log Towing Association, who is a competent authority on the subject, says in a recent interview in the Northwestern Lumberman, that next year Alpena will receive from Canada nearly 100,000,000 feet of logs, and that mills on the Saginaw river will receive 200,000,000 feet. These logs will be made up into probably 100 rafts, or a raft for almost every day of the season favorable to the business, which runs from June to October.

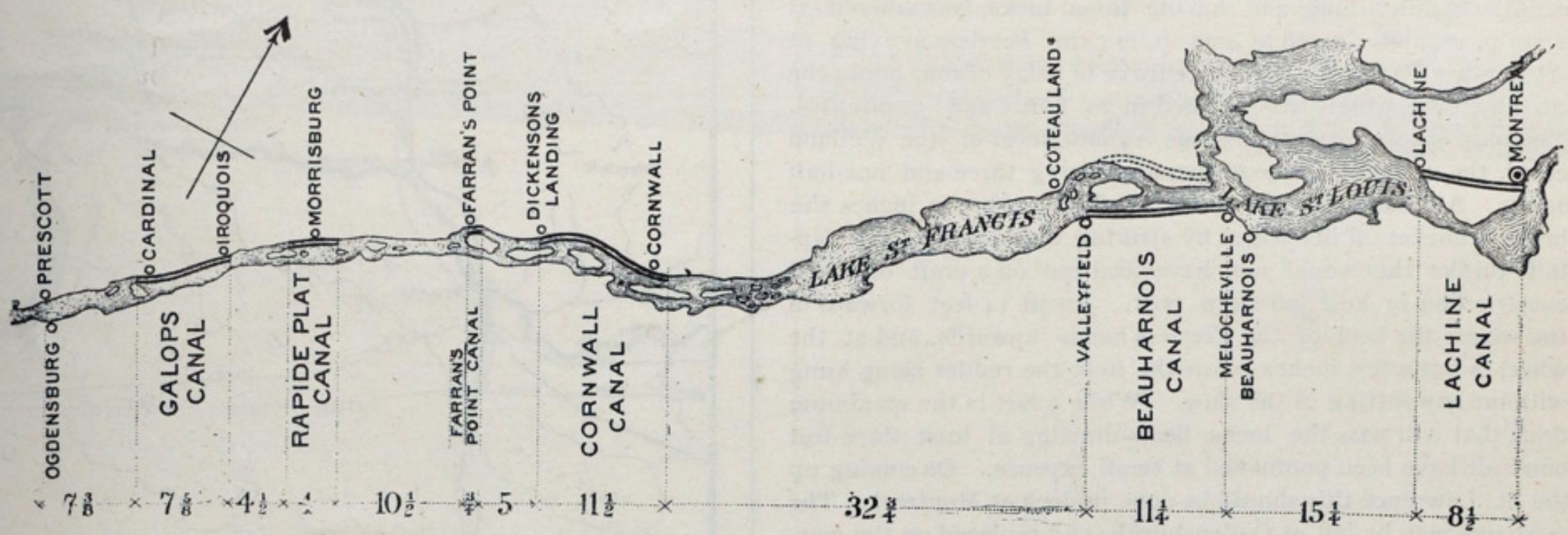
The value of one of these rafts varies from $30,000 to $50,000, and the value of the timber thus rafted during the season would amount to between $6,000,000 and $8,000,000. An average of 100 to 200 vessels traverse this course every day, and the value of boats and cargoes passing through Lake Huron in one day would amount to as much as the value of the timber rafted across the lake during the entire season. Each one of these vessels has to be built and equipped according to government requirements for safe navigation to the craft itself, as well as for safety of other vessels. Certain lights have to be carried, and watchmen have to be employed, in order that collision may be prevented.

On the other hand, there are practically no regulations governing the rafting business. Mr. Roys, the Lumberman referred to above, makes a very strange statement in this connection. In speaking of the new system of double booms, he declares that "if a reckless captain of a steamer plying up and down the lakes, should chance to run into such a raft, his vessel would be the sufferer in the encounter." No captain will run into a raft properly lighted. That rafts can be constructed like a ram, and can possibly sink a cargo steamer worth four or five times as much as the raft, or a passenger steamer with several hundred passengers, would seem, from the statement just quoted, to be a matter of pleasant contemplation for lumbermen. But it is not the absence of lights alone that is a menace to navigation. Rafts are not built to withstand a heavy storm, and therefore are mainly towed in summer, when fair weather is expected. Good weather can not always be counted upon, however, and in all seasons there are numerous accounts of these rafts breaking up. The loose logs are not all recovered, and float around the lakes half-submerged, until driven ashore. A $235,000 steel steamer recently had every bucket knocked off her wheel by one of these logs. She was towed into Sand Beach, where she waited several days for repairs. A water soaked log, struck end on, would puncture a steel steamer.

In the interview referred to above Mr. Roys says of the history of rafting business on the great lakes: "Twenty years ago a Chicago firm tried the experiment of bringing logs across Lake Michigan, and lost them because the quantity was so small that the force of the gale carried them over and under the boom sticks, and the enterprise was abandoned, and nine out of ten of the men familiar with the storms that sweep over the great lakes said it never could be done as a regular business, but now the most timid business man will risk his logs along with the boldest. Long booms stretched across the waves let the logs slip out beneath them, so that shorter boom sticks of large size were used, which followed the undulations of the water. Chains were used, larger and larger, until now the massive 1¼ inch chains that bind the booms together will hold fast, though the tempest rages, provided the raft is in open water. For the first few years no one thought of putting a double boom around a raft, but it was discovered that if a raft got ashore the single string of booms was liable to get kinked and break apart, while a double boom, properly fastened and looked after would scarcely ever break up and scatter the logs. In the fall of 1886 the tug Mocking Bird started from French river with the first log boom raft that was ever towed from Georgian bay. She experienced stormy weather, and was obliged to leave her raft in a sheltered cove on Strawberry island until the following spring, when she picked it up and towed it to its destination. This was the forerunner of the long procession of great rafts that now follow each other in quick succession from the northern rivers out across Lake Huron and into the Saginaw river."

Waterways Guide to the World's Fair.

For the convenience of owners of steamers and yachts who will bring their crafts from the coast to the World's Columbian Exposition at Chicago, the following information has been gathered from reliable sources. It will also be valuable to ship builders in taking craft built for ocean service to the coast. The most important and the only route available for boats of large size is the St Lawrence river and canals thence through the lakes to Chicago. The greatest length of a boat passing the St. Lawrence canals must not exceed 185 feet over all, the locks being 200 feet over gates, and the boat must not draw over 9 feet. The statement of extreme length is verified by Secretary Allen



THE ST. LAWRENCE CANALS.

12-foot horn, 146 feet water line, 22 feet beam, and draws 8 feet 9 inches. She left New York on the evening of July 14 and arrived in Cleveland on July 26, laying over at Prince Edward's island twenty-four hours. She went up the sound from New York, and a day's run off Cape Sable struck a fog that lasted 30 hours. After running the log out, soundings were taken and she was put out, when her course was shaped for the turn. She was coming to anchor, when the fog lifted and showed the lights they were after. Pilot schooners lay off Bic island, 150 miles east of Quebec, and a pilot was taken on. He ran into Quebec and furnished another pilot, who went as far as Montreal. The third pilot took the yacht from Montreal through the canals to

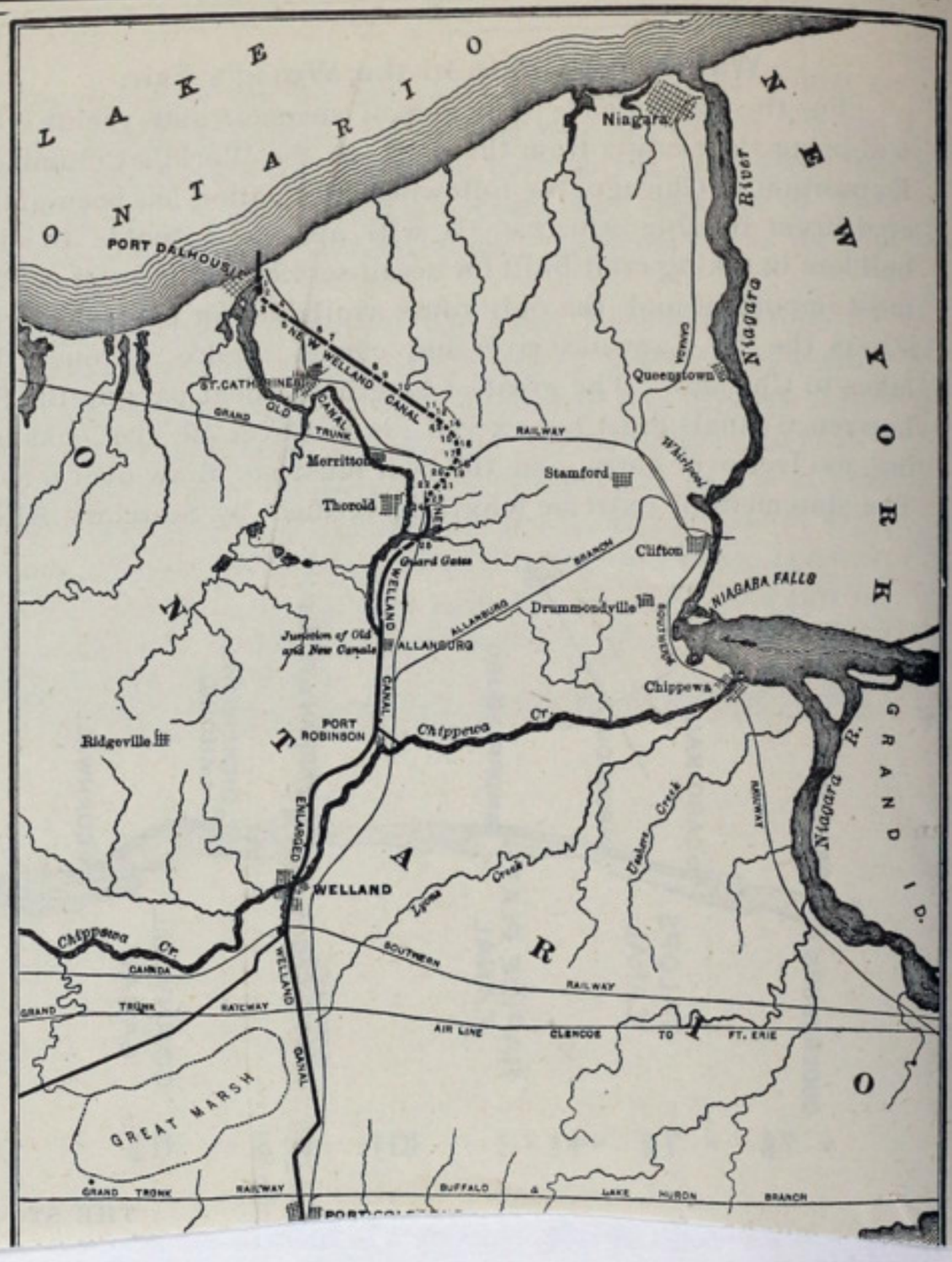
GENERAL COURSES FROM THE ST. LAWRENCE RIVER TO CHICAGO.

of the Globe Iron Works Company, who has recently accompanied the two light-house steamers built by his company to the coast. The yacht which will go to the coast building by the Globe company, is 185 feet over all without the jib boom, which will be removed to permit her going through.

The following extracts from the log of steam yacht Peerless, which came through the St. Lawrence canals to the lakes recently, will furnish valuable suggestions to masters of craft making the same trip. The Peerless is a handsome yacht of 113 net register tons, owned by C. W. Harkness of New York, and commanded by Capt. Averill. She is 166 feet over all, excepting a

Cape Vincent. Capt. Averill advises that fuel and supplies be taken on at Montreal instead of Quebec, on account of tide and other difficulties at the latter port. He mentions the Robertson dock as a fueling place. At Montreal a customs officer will board the boat and ask for a report of passengers and crew, etc. On account of having a pleasure yacht license the Peerless was not required to secure clearance papers at any port. It is necessary to call at the canal office at Montreal for a canal pass, which must be surrendered up at the last lock. There are no speed regulations on the St. Lawrence canals. The canal tolls on the Peerless, 113 net tons, were 85 cents from Montreal to

Kingston, and $2.20 for passing through the Welland canal, the total rate for both canals being 2¼ cents per register ton. Leaving Quebec at 7:55 p. m., the Peerless arrived at Montreal at 10:30 a. m. the next day, leaving at 4:30 p. m. Between that time and midnight she passed through the Lachine canal, 8½ miles long, with its five locks; through Lake St. Francis and the Beauharnois canal, nearly 12 miles long, with nine locks. Laying there until 4 a. m. the Cornwall canal, nearly 12 miles long, with six locks, was entered at 7:10 a. m. and left at 11:36 a. m. By running up three rapids the Farran's point and Rapide Plat canals were avoided. One of these is quite swift, and should not be attempted unless the pilot is very capable. The Galoup canal, 7½ miles long and having three locks, was entered at 2:30 p. m. and cleared at 4:45 p. m., the Peerless arriving at Alexandria Bay at 8 p. m. Exclusive of delay of four hours the St. Lawrence canals were passed in 20 hours and 35 minutes. The only speed regulation is one 14-mile level of the Welland canal, the minimum time of passing being three and one-half hours. Although the Peerless only drew 8 feet 9 inches she broke a bucket off her wheel by striking the bottom. The captain thinks this would not have occurred on a craft of usual construction in keel and stern post. About 14 feet forward of the wheel the keel of the Peerless bends upwards, and at the wheel is but a few inches below the hub, the rudder being hung without any setting in the shoe. While 9 feet is the maximum draft that will pass the locks, boats drawing at least three feet more aft have been pontooned at small expense. On coming up the St. Lawrence this should be done in dock at Montreal. The pontoons may be left at Ogdensburgh, and replaced on the marine railway when the return trip is made. The Collins Bay Rafting and Forwarding Company, Collins Bay, Ont.,



Cornwall					
Farran's Point	¾	"	1	200 by 45 "	9 "
Rapide Plat	4	"	2	200 by 45 "	9 "
Galops	7⅝	"	3	200 by 45 "	9 "
Welland	26¾	"	26	270 by 45 "	14 "

The distance from Quebec to Chicago by the water route is 1,416¾ miles. The difference between the level of St. Lawrence river where tidal influence ceases and that of Lake Michigan is about 570 feet. Over 70 miles of the distance mentioned is artificial navigation. Total of lockage in canals is 533¼ feet; number of locks 53. The canals are usually closed from December 1 to June 1.

HUDSON RIVER AND ERIE CANAL ROUTE.

Yachts or vessels not over 100 feet long, drawing not over

[illegible] 3; 3 a. m. Arriving at Albany at 6 p. m., made fast alongside steam derrick dock. Distance run, 154 miles. May 26, lifted out spars and smoke stack, and shipped them to Buffalo by rail. At 4 p. m. left Albany and at 5 p. m. entered lock at Troy, coming out of lock No. 18 at 7 p. m., having passed eighteen locks in two hours. At 9 p. m. tied up above lock No. 19. May 27, got under way at 5:30 a. m. and tied up at 10:30 p. m., having run 65¼ miles and passed fifteen locks. May 28, got under way at 4:15 a. m., and tied up at 7 p. m., 13 miles east of Syracuse. Miles run, 78¾; locks passed, twelve. Superintendent gave permission to run six miles on his section. May 29, ran 54½ miles, and tied up at Clyde coal wharf and coaled up. May 30, ran 77¼ miles and passed fourteen locks. May 31, entered first

of five locks at Lockport at 9 a. m. Permission was obtained to run six miles an hour. At 2 p. m. passed Tonawanda, and at 4 p. m. passed the last lock on the canal, Black Rock, and at 5 p. m. tied up in Buffalo. Distance run, 63 miles; locks passed, six.'' The above is furnished through kindness of Capt. Howard Pattsrson, who gives the following information:

At Rochester there are many sharp turns and hoisting bridges, with only 11 feet under them; whistle three times for opening signal. From the Battery, New York, the distance to Troy is 160 miles, and a six feet draft is safe to either Albany orTroy, as well as through all the locks. Boats drawing less than three feet need no pilot up the Hudson river. The canal has seventy-two locks, and is 352 miles long. It can be entered at either Albany or Troy. The channel is 70 feet wide on the surface and 56 on the bottom. All locks are 110 feet long. Before entering the first lock a vessel must procure a pass—the canal is free and there is no toll to pay. Speed is regulated to 4 miles per hour, but permission to run 6 miles may be obtained from division superintendents. Yachts may strike spars and tow through the canal for $25 or $30. The total lockage amounts to 650 feet between Albany and Buffalo. Bridges are a half mile apart usually in open country, but very close in cities and towns. When approaching closed lock gates blow three whistles. The charts of the Hudson river printed by the government only show the channel as far as Hudson City. Beyond that they advise the services of a pilot, as the channel changes from season to season. Pilots may be obtained at Catskill landing or at Hudson. The pilotage fee from Catskill or Hudson to Albany is $5, and return car fare for the pilot is 75 cents. From Catskill or Hudson to Troy the pilotage fee is $1 more. In case it is decided to feel the way without a pilot, great care should be used to avoid the shoal dykes, on either side in some places, and just below the water. The channel is very crooked, going from side to side, and no one should attempt to run it at night.

Publications

Hendricks' Architect and Builders' Guide and Contractors' Directory contains over 150,000 names, addresses and business classifications comprising builders and contractors of material and construction. The arrangement of index and classification of manufactured articles, material etc., makes it handy as a book of reference. It is published by S. E. Hendricks & Co., 44 Broadway, New York.

The Life and Voyages of Christopher Columbus by Washington Irving, complete and illustrated, is a standard book and full of interest, especially in view of the world's fair. No one can thoroughly appreciate the coming exposition without knowing something of the man who discovered this country. It is more interesting than fiction. Any captain, engineer or mate sending two yearly subscriptions to the REVIEW will receive a copy of the book bound in paper, post paid.

The Engineers' Epitome is the third of a small series of handbooks that are free from technicalities and are to be comprehended by a man of average ability in mechanical matters. Mr. C. B. Calder, chief engineer of the Menominee line of steamers, said after examining the Epitome: "Most of the engineers on the lakes could take the book at the beginning and work through it with a little perseverance, and when they were through they would have gained something that would be valuable to them, and they would be better engineers." Key to Engineering, Common Sense in Making and Using Steam and the Epitome—the three making an engineers' library—can be obtained for $1 from the Mason Regulator Co., 10½ Central street, Boston, Mass.

New Tonnage.

The only new tonnage contained in the supplement of the Inland Lloyd's Vessel Register for October is the Columbia, built by Robertson at Grand Haven, 73 net tons and valued at $7,500, and the Seattle, built by H. Still, Oscoda, 331 net tons, and valued at $30,000. The Columbia is owned by Rudoc and others, Frankfort, Mich., and the Seattle is owned by the builder, but hails from Au Sable.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company	$100 00	$.....	$ 65 00
Champion Iron Company	25 00	.....	58 00
Chandler Iron Company	25 00	45 00	47 00
Jackson Iron Company	25 00	.....	.....
Lake Superior Iron Company	25 00	.....	41 00
Minnesota Iron Company	100 00	.....	75 00
Pittsburgh & Lake Angeline Iron Co.	25 00	.....	.....
Republic Iron Company	25 00	.....	12 00
Ashland	25 00	.....	.....
Section Thirty-three	25 00	.....	5 00
Brotherton	25 00	2 00	2 50
Iron Belt	25 00	2 25	2 50
Aurora	25 00	8 25	.....

The action of the Minnesota Iron Company in purchasing powerful machinery for reducing its hard ores,—and the new order at the Lake Angeline mine, whereby the men will be worked in eight hour shifts, are prominent changes in the Lake Superior mining business that will be watched with considerable interest. The managers of the Lake Angeline mine are of the opinion that by the eight-hour plan as much ore can be mined with the same force of men. The men are now divided into three shifts instead of two, and the mine is worked during the entire twenty-four hours of the day. The miners are pleased with the change. The company has made the change as an experiment, and will give it a three months' trial.

Shipments of iron ore from Two Harbors up to and including Wednesday, Sept. 28, aggregated 953,132 gross tons, of which 546,829 tons were from the Chandler, 394,754 tons from the Minnesota, 2,525 tons from the Pioneer and 9,024 tons from the Zenith mine. On the same date shipments from Ashland aggregated 1,821,753 gross tons, divided among the different mines as follows: Ashland 165,120 tons, Aurora 256,294, Colby, No. 1, 3.759, Colby, No. 2, 51,850, Rand 17,700, Tilden 194,783, Iron Belt 128,948, Montreal, south vein, 3,383, Montreal, north vein, 27,527, Palms 52,205, Section 33, south vein 4,619, Section 33, north vein 3,133, Anvil 1,696, Brotherton 88,620, Comet 33,707, Carey 28,063, Newport 104,262 Imperial 5,803, Norrie 347,959, East Norrie 166,619, Odanah 3,193, Pabst 44,447, Eureka 6,675, Sunday Lake 41,684, Windsor 26,673, Jack Pot 2,717.

It is said that Peter Kimberly, who will conduct extensive mining operations on the new Mesaba range, has been figuring with the American Steel Barge Company for transporting his ore next season. Mr. Kimberly may have sought the opinion of Capt. McDougall and others relative to the probable cost of carrying ore next season, but is not probable that he will make any transportation contracts until the coming winter, when contracts will undoubtedly be made according to the usual custom. Neither is it probable that the officers of the barge company would consider a freight proposition just now, unless it was one decidedly favorable to them. When the time comes it will be found that the transportation of ore from the Mesaba range will be cared for just as the ore from other ranges is handled as regards freight matters.

Ferdinand Schlesinger is said to be making arrangements for shipping Chapin ore over the St. Paul road to Gladstone. Mr. Schlesinger may, as reported, have no love for the Chicago & North-Western company, but this story lacks strength from the fact that the present ore docks at Gladstone could care for only a very small portion of the Chapin product.

The Ohio Iron Company has sold its lease of the Ohio mine to the Kimberly syndicate. The consideration was $105,000, and as the Sheridan-Wemer people paid only $25,000 for the same it will be readily seen they have made a splendid profit. The Kimberly syndicate seems bent on securing several of the very best mines on the Mesaba.—Vermillion Iron Journal.

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MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }
HOMER J. CARR, . . . Associate Editor and Manager Chicago Office, Western Union Building, 110 LaSalle Street.

Published every Thursday at No. 516 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels	1,243	325,131.06
Canal boats	703	72,515 42
Barges	62	20,472.37
Total	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
1891	204	111,856.45
Total	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 228 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014. Number of boats through St. Mary's Falls canal in 1891, 225 days of navigation, 10,191; tonnage, net registered, 8,400,685. Number of boats through Suez canal during 1891, full year, 4,207; tonnage, net registered, 8,698,777.

Entered at Cleveland Post Office as Second-class Mail Matter.

MR. E. C. O'BRIEN, commissioner of navigation, is very enthusiastic over his scheme looking to the establishment of nautical schools for the better scientific education of men employed in the merchant marine on the Atlantic coast and on the lakes. It is said that his annual report will recommend floating schools on the lakes and on the seaboard, to be maintained by government expense. We have no desire to discourage Mr. O'Brien's plans in saying that it is not probable that they will receive sufficient support from the lakes to warrant congress in making appropriations for the proposed work. The science of navigation finds no place in the requirements demanded of a capable master on the lakes. A school conducted under plans greatly modified from those intended for the coast could be made to assist young men having some practical experience as mates or wheelmen, but highly scientific instruction would be of no use to them.

WHATEVER may be the news from Washington regarding Secretary Foster's intentions in the case of Col. Ludlow and Commander Heyerman, the friends of these officers can rest assured that the strongest influence on the lakes is being brought to bear in their behalf, and that lake shipping interests will stay by them to the end. These officers have been efficient, earnest, intelligent and successful in the performance of their duties to the manifest benefit of the interests depending on the proper discharge of their service. Secretary Foster may hesitate on account of the probable resignation of certain members of the light-house board, but the coming week will undoubtedly show that the enemies of these district officers in Washington will themselves suffer the results of persecution which they had planned for others.

WHY should Col. Ludlow seek justice from an army court of inquiry? It has been known, of course, that he can at any time have such an inquiry, and there is no doubt that his action in the St. Mary's river lighting matter would be fully sustained by such a court. Application for justice from this source would, of course, be made as a last resort. Certain officers of the light-house board have, however, acted as prosecutors, judge and jury in trying the case, and they must be dealt with first.

FORTY-THREE lights, the number contended for by Col. Ludlow aud Commander Heyerman, are now in operation on St. Mary's river. Thus it will be seen that the district officers were justified in deferring the execution of the erroneous instructions given them and in seeking to have them corrected to conform with the facts as has since been done.

The Grain Movement—Light Exports.

Some figures from Buffalo and New York city relative to the grain movement from the west and northwest to the seaboard and the exports to Oct. 1, will be interesting to lake vessel owners and shippers who are in a quandry over fall freight rates. Buffalo received by lake so far this season more flour and grain than during any other season in the history of the business on the lakes. Receipts at Buffalo from the opening of navigation to Oct. 1, compared with the same period last season, are as follows:

	Flour, bbls.	Grain, bu.	Grain, including flour, bu.
1892	6,574,445	92,346,612	125,218,837
1891	4,140,451	79,776,521	100,478,776

This statement from Buffalo is of itself enough to show that western wheat growers are rushing their grain to market, but the figures from New York and other Atlantic ports prove that not even during the fall months of 1891, when the demand was urgent and prices were more than 25 cents per bushel higher than at present, and when furthermore the largest crop ever raised in this country was ready for market, did the farmers push their grain forward as rapidly as of late. The following tables show receipts and exports at four principal Atlantic ports from July 1 to Oct. 1 in 1891 and 1892:

FOUR PRINCIPAL ATLANTIC PORTS, JULY 1 TO OCT. 1. 1892.

	Flour, bbls.	Wheat, bu.	Corn, bu.
Receipts	4,412,297	37,456,369	9,695,457
Exports	3,417,657	23,008,355	4,776,522
Excess of receipts	994,640	14,448,014	4,918,935

FOUR PRINCIPAL ATLANTIC PORTS, JULY 1, TO OCT. 1, 1891.

	Flour, bbls.	Wheat, bu.	Corn, bu.
Receipts	3,642,048	42,746,492	10,010,493
Exports	2,186,225	33,730,679	6,212,146
Excess of receipts	1,455,823	9,015,813	3,798,347

It will be seen from these statements that the accumulation of wheat at Atlantic ports from July 1 to Oct. 1 of this year is 5,432,201 bushels in excess of the accumulation during the same period in 1891, and this in the face of very large stocks at home and abroad. Exports for the week ending Oct. 1 were larger than they were during the corresponding week in 1891 but they do not keep pace with the heavy receipts, and lake shippers argue accordingly that there can be no great boom in the fall grain freights.

There is little danger, however, of any blockade of grain in Atlantic coast elevators. New York alone has twenty-seven elevators with a storage capacity of 27,275,000 bushels.

Stocks of grain at Chicago and Duluth on Monday, the 3rd inst., were:

	Chicago.		Duluth.
	Wheat, bu.	Corn, bu.	All wheat, bu.
In store	7,494,623	4,663,222	3,154,431
Increase last week	282,000	183,000	927,129
Increase compared with same time last year	4,265,663	1,896,004	.....

In addition to the above there is in store in Chicago 2,422,576 bushels of oats, 320,380 bushels of rye and 175,871 bushels of barley.

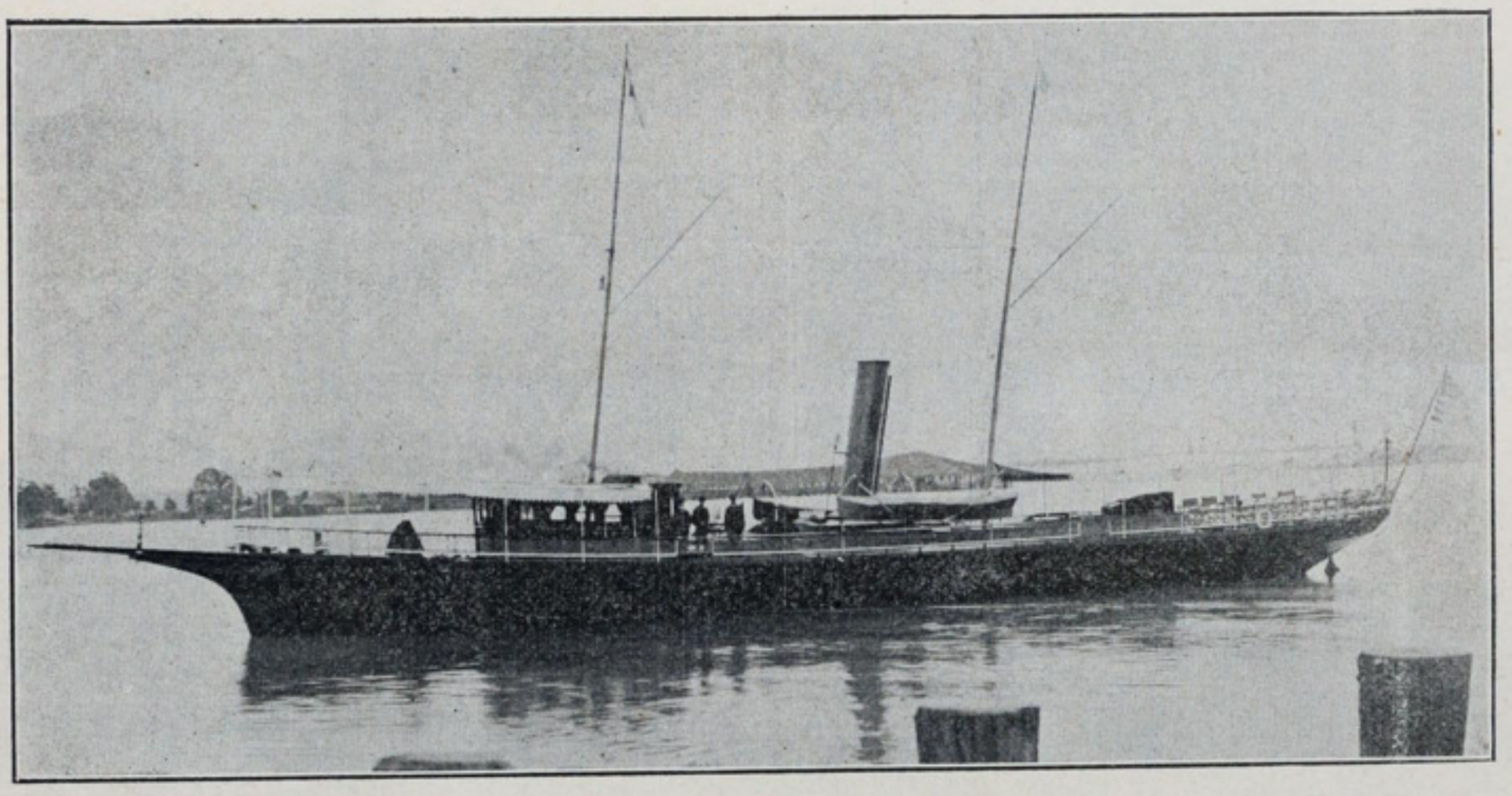
lake steamers loading at once at the same elevator. The grain is spouted into the vessel very rapidly and from two to three hours after arrival a big grain carrier is often steaming out of the harbor with a full cargo.

Buffalo has thirty-two grain elevators with a total storage capacity of 15,000,000 bushels. The storage capacity of Buffalo elevators is not large in proportion to the great amount of grain handled there each season for the reason that it is a receiving port and its elevators are constructed for the purpose of taking the grain from vessels and transferring it either to railroad cars or canal boats. Erie and Fairport, two other grain receiving ports on Lake Erie, get only a small portion of the business. When a vessel arrives at an elevator in Buffalo and the hatches are opened, the ponderous leg of the elevator containing an endless chain, to which are attached a continuous line of tin buckets, is lowered through the hatch into the grain, frequently burying its nose from 5 to 10 feet in the cargo. Of the thirty-two Buffalo elevators, six have two legs,and in the case of three of these one leg is carried in a tower 100 feet or more in height which moves on a railroad track, so that the distance between the two legs can be adjusted to correspond with the distances between the hatches on the vessel. In these three elevators the two legs can therefore always be used together. The work of the legs is aided by steam shovels which are introduced into the hold of the vessel, two of them working in connection with each leg and bringing the grain constantly to it.

There are elevators in Buffalo which can take grain out of a vessel at the rate of 25,000 bushels an hour. When the cargo is nearly all taken out the work of the steam shovels is at an end, and the scoopers and sweepers bring the last bushels of grain to the leg of the elevator. Some examples may be given showing the dispatch given vessels by the use of this method. On August 14, 1891, the steamer Robert Mills arrived in Buffalo with 77,000 bushels of wheat at 9:20 a.m. She went at once to an elevator, unloaded her grain, then went to a coal dock, took on 2,300 tons cargo of coal and was ready to leave port at 7 p. m. of the same day. On Sept. 24, 1891, the steamer E. C. Pope brought into Buffalo 100,000 bushels of wheat. Arriving at 7 a. m., she got an elevator at 9 a. m., and finished unloading a few minutes after 3 o'clock, having unloaded her entire cargo of 100,000 bushels in six hours, which included shifting of the vessel so as to permit the different hatches to be unloaded and also the necessarily slow work of taking out the last bushels of her cargo. On the last named date, Sept. 24, 1891, one elevator in Buffalo elevated from vessels in the course of twenty-four hours more than 300,000 bushels of grain.

The new Kellogg elevator, being the last one erected in Buffalo and one of the largest, embodies all of the best features known to the business and is the best equipped of any in the harbor. The position of the house is its main point of vantage, as it is thus enabled to elevate grain with both marine legs, and to ship out into both canal boats and cars at the same time at a rapid rate. Still the perfection of the style of elevator long in use in Buffalo is all that can be claimed for it. The bins are 110 in number, each ten feet square and seventy-three feet high, which gives them a capacity of a little over 5,000 bushels each, or not far from 600,000 bushels in all. The bins are laid up of planks placed flatwise in the usual way, beginning with 2x12's and gradually narrowing to 2x6's towards the top. This forms a structure 220x50 feet, above which are added two stories, for scales and other machinery, of eighteen and 17 feet in height each, over which the projection for the marine legs rises eight feet into the roof.

All well-equipped elevators now have two marine legs, one stationary and one on wheels, so as to accomodate itself to the variation of the hatches of vessels. The tower containing the movable leg is solidly built on heavy stone piers. Each leg has a separate capacity of 10,000 bushels an hour. About ten days ago a cargo of 162,000 bushels of oats was taken out of the steamer Pabst in eight hours. These marine legs are equipped with seventeen-inch buckets. There are also four inside full length legs, two for putting grain in store and one each for loading cars and canal boats. When not elevating all four can be used for loading. These have twenty-inch buckets, which is the largest size known. The conveyors used are of flat rubber belting, which are capable of carrying 14,000 bushels an hour. The bins are handled on the swivel system, each swivel delivering to a certain number or bins within its circuit. The bins spout grain both to the conveyors and to the foot of the different inside legs for delivery. The weighing system is similar to that generally used in Buffalo. The elevator in its present condition is prepared to elevate grain from a lake vessel at the rate of 20,000 bushels an hour, to load a canal boat of 8,800 bushels in forty-five minutes, and to load cars at the rate of 10,000 bushels an hour, and not only to do all these things, but to do them all at once. Herein lies its claim to superiority over all other elevators, yet its owners are not satisfied with even such a handling capacity. Plans are in progress for so adding to spouting and other facilities that twelve cars can be loaded in thirty minutes without moving them. Giving each car 1,000 bushels capacity, this is a wonderful achievement. The elevator is equipped with a blower for running over grain that shows signs of getting out of condition, and is furnished with a 400-horse-power cross-compound condensing engine. It is under the management of J. Tallman Budd, who has been a practical elevator man for a long time, having been successively in the Commercial, (burned out some time ago), Niagara and Wells elevators.



STEAM-YACHT BONITA, BUILT BY THE DETROIT BOAT WORKS, DETROIT, MICH.

In General.

A 54-foot launch capable of making 13 knots an hour is being built at Morris Cove, Conn., by George G. Mallory, who will take it to New York and thence up the Hudson and through the Erie canal and the great lakes to the world's fair next year.

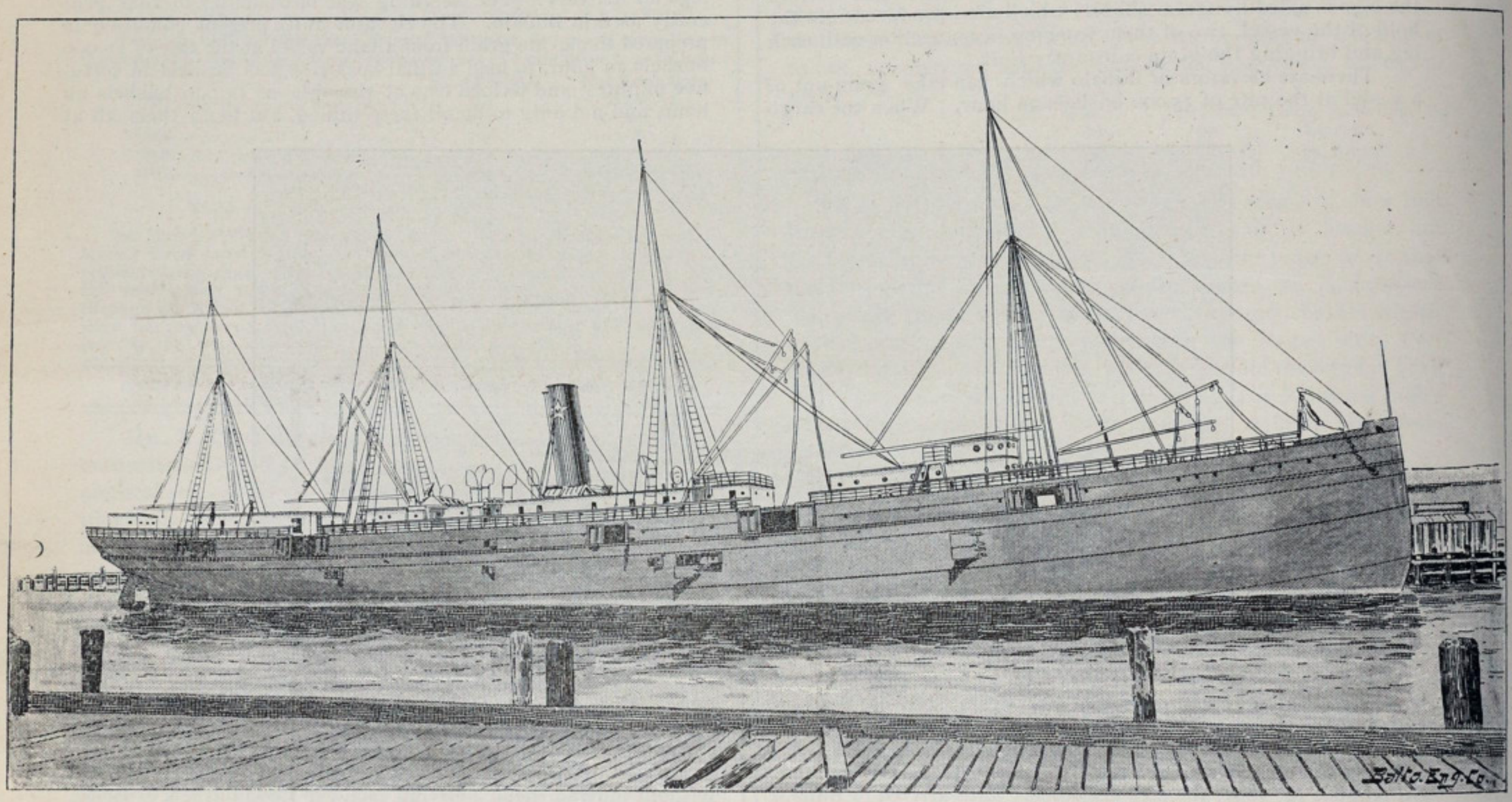
The funnels of the ordinary Atlantic liners are about 18 feet in diameter, and yet it is said that none of them will compare with the funnels of the two great Cunarders building at Fairfield. These are to be, without exception, the biggest funnels ever constructed for a steamship. If one of them were placed on its side, room would easily be found for laying the ballasting and permanent way of an ordinary railway, and for running through it the largest express locomotive engine ever built.

Additions to the Morgan Line.

The accompanying illustration is presented through courtesy of the Baltimore Manufacturers' Record. It represents the El Sud, one of the latest additions to the Morgan line of steamers. She was built by the Newport News Ship Building and Dry Dock Co. A sister ship, El Norte, was launched May 14. El Rio, a third vessel from the same plans, is now on the stocks. The vessel shown in the illustration is 380 feet long between stem and propellor posts and 406 feet over all; breadth of beam, 48 feet; depth, 33.9 feet; registered tonnage, 4,500. There are three decks and a partial orlop deck at the fore end of the fore hold. The four masts are of iron, and the deckhouses are also iron. The vessel is to be steered by steam from the forward pilot-house or by screw hand gear from the after house. A Providence windlass and steam capstans are provided for handling anchors, hawsers, etc., as well as a steel rope with drum aft for towing. The engine is of vertical triple expansion type, with three cranks placed at angles of 120 degrees. The cylinders are 32, 52 and 84 inches by 54 inches stroke of piston, working under 167 pounds of steam, which will be generated in three double-ended cylindrical steam boilers, with three Continental corrugated furnaces at each end.

Notice to Mariners.

The Squaw Island light station is to be lighted. The light-hruse board gives notice that on or about Oct. 10 a fourth-order fixed red light varied by a red flash every fifteen seconds, will be exhibited from the structure recently erected on the northerly end of the island, which is the most northerly of the Beaver island group, north end of Lake Michigan. The light will illuminate the entire horizon. The focal plane is about sixty feet above lake level, and the light may be seen in clear weather, the observer's eye fifteen feet above lake level, about fifteen and one-quarter miles. The light will be shown from a black lantern surmounting a red brick tower, forty-eight feet high from base to focal plane, square at the base and octagonal above, and forming the north-west corner of a red brick dwelling with red roofs. Bearings and distances of prominent objects are: Garden island, N. tangent, E. S. E. ¾ E. 3⅛ miles; Trout island, W. tangent, S. W. ½ W. 6¾ miles; Seul Choix point light-house, W. N. W. ¼ W. 16½ miles; Scott's point, N. N. W. ¾ W. 9½ miles. During thick or foggy weather a ten-inch steam whistle will sound blasts of five seconds' duration separated by alternate silent intervals of twenty and forty seconds.



Lake Huron Weather Bureau Stations.

Regarding progress in the work of establishing weather bureau stations on Middle and Thunder Bay islands, Lake Huron, for which $15,000 was appropriated at the last session of congress, Mark W. Harrington, chief of the weather bureau, says in a communication to the MARINE REVIEW:

"Steps have been taken to put in the telegraph lines as soon as the submarine cable can be furnished, which it is hoped will be before the close of this season. It will require the laying of about seven miles of cable and the building of about twenty-five miles of land line. Upon the completion of the lines, the display of signals will begin. The location is such that all vessels to or from Lakes Michigan and Superior, through Lake Huron, pass within sight and can be warned by the signals displayed on these islands. It is expected also, that communication by wire with Alpena, and from one island to the other, will be of great value in obtaining assistance for vessels in distress, or in case of wrecks, which occur perhaps as frequently in the vicinity of these stations as any others on the lakes."

Official Numbers and Tonnage.

The bureau of navigation, E. C. O'Brien commissioner, assigned official numbers to, and passed upon the tonnage of the following lake vessels during during the week ending Oct. 1: Steam—Wyandotte of Detroit, 320.22 tons gross 160.11 net, No. 81,406; Indra, of Buffalo, built at Buffalo, 9.99 tons gross, 7.42 net, No. 100,548. Sail—Toreta, of Port Huron, Mich., 328.22 tons gross, 311.81 net, No. 141,238.

Record of Speed and Big Cargoes.

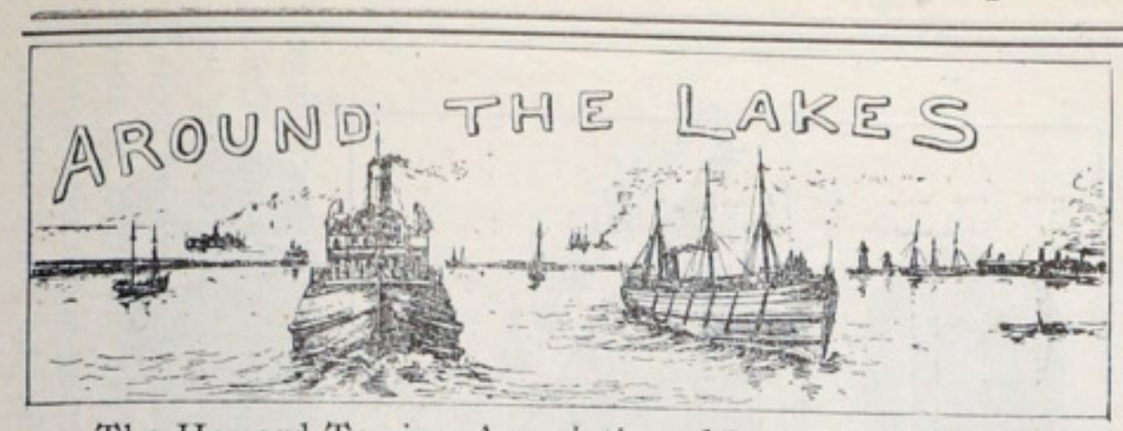
[*Masters or owners of freight boats are invited to report improvements on this list.*]

Iron ore: Maritana, Minnesota Steamship Company of Cleveland, 4,260 gross, or 4,771 net tons, Escanaba to South Chicago; Maryland, Inter-Ocean Transportation Company of Milwaukee, 3,663 gross, or 4,103 net tons, Escanaba to South Chicago, draft 17 feet 4 inches.

Grain: E. C. Pope, Eddy Bros. of Bay City, 125,730 bushels of corn, Chicago to Buffalo, draft 14 feet 8 inches; Owoko, Minch estate, Cleveland, 113,829 bushels of wheat, Chicago to Buffalo; W. H. Gilcher, J. C. Gilchrist of Cleveland, 113,820 bushels of wheat, Chicago to Buffalo.

Speed: Owego, Union Line of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour.

MARINE REVIEW for one year and Patterson's Nautical Dictionary for $6.



The Howard Towing Association of Port Huron has handled twenty-eight rafts this season without losing one. The tug Sumner brought a string of logs containing 2,300,000 feet to Sandusky this week.

Officers of the steamer E. C. Pope claim to have beaten, on the last trip up, the Canadian Pacific steamer Alberta three or four miles in a race from the Sault to Whitefish point. The boats locked through the canal together.

At a recent meeting of the Cleveland branch of the Shipmasters' Excelsior Marine Benevolent Asssociation fitting resolutions to the memory of Peter Minch, A. W. Reed and Albert Myers were adopted. They have since been elegantly engrossed and forwarded to the families of the deceased members.

Judge Jenkins, of the United States district court at Milwaukee, has rendered a second decision in the celebrated Armour-Marion collision case, denying a motion for a new trial, and holding as he did before that both steamers were at fault, and that the damages should be divided between them.

Underwood & Coman of Marionette have purchased the steamer Arctic for $12,000. She was purchased last spring for $6,000, and was repaired to the extent of $3,500. She will tow the barges Ogarita and Gardner for the rest of the season, and will be under the management of Connelly Bros. of Buffalo who own the barges.

The bodies of Mrs. Peter Minch and the two children, and Capt. Myers and Martin Klaussen were brought from the Sault to Cleveland last week on the steamer Wawatam. The former were interred alongside the grave of Capt. Peter Minch, in Cleveland, and the remains of Capt. Meyers were sent to Vermillion for burial.

Dispatches from Superior say that ore from the Mesaba range will be shipped from the docks at that point during the present month. This is hardly probable, however, as railway building has been very much delayed, and the docks are not as far advanced as it is thought they would be at this time. Some Mesaba ore will go to the furnaces by rail. Capt. G. W. Gillett will be superintendent of the new Superior docks.

Duluth's board of public works now asks the council of the city to withdraw its communication of July last recommending a bridge across the canal entrance to Duluth and Superior harbors, in opposition to,the report of the United States engineers against a bridge. The board is of the opinion that a tunnel can be constructed for $600,000. It will probably be many years, however, before Minnesota point, the strip of land which it is sought to reach, is connected with the city.

Oswego newspapers say that the elevator of the New York, Ontario & Western Railroad talked of some time ago will not be built unless an equality in Welland canal tolls is established through negotiations now pending between the United States and Canadian governments. If the Welland tolls are removed entirely next season it is claimed that in addition to building a big elevator at Oswego, the railroad company will put a line of steamboats on the lakes.

Capt. Gerlach, of the steamer Ouoko, didn't propose to give up the honors of carrying the largest cargo of grain from Chicago to Buffalo without satisfying himself. He writes to his owners from Buffalo, and asks that the attention of the editor of the REVIEW be called to it, that the Gilcher's shortage made her cargo only 113,820 bushels, while the Onoko's load of 113,839 bushels still stands. As it is a matter of pleasant rivalry among the captains, both loads are included in the speed and big cargo list. It is again worth mentioning in this connection that the Onoko was the first iron freight boat built in Cleveland.

The life saving station on the grounds of the World's Columbian Exposition is rapidly nearing completion. The exhibit at the station will show to perfection the work of the service. A regular crew will perform a daily drill, and apparatus from the Atlantic coast and from the rivers will be shown. The station will be a permanent one, displacing the present Chicago station and remaining after the exposition. The government was not able to secure a satisfactory and permanent title to the site of the present Chicago station, and in the last sundry civil appropriation bill congress inserted a proviso that a new station should be erected within the grounds set apart for the world's fair, on condition that there must first be ceded to the United States the title to the site selected.

A Retiring Member of Congress.

HON. VINCENT A. TAYLOR.

Hon. Vincent A. Taylor, member of the fifty-second congress from the twentieth Ohio district, has not sought a renomination, and the shipping interests of the lakes will thus suffer the loss of one of the most earnest representatives they have ever had in Washington. Mr. Taylor's efforts in behalf of the lake marine were undoubtedly most important in securing the large appropriations made in the first session of the present congress, and he will be found continuing the work to the end of his term in the next session. It is truly unfortunate that business interests would not permit of his return to Washington.

Taxation of Vessel Property.

In several lake cities just now boards of equalization and other officers looking after matters of taxation are troubling themselves as to how they shall tax vessel property. A great cry is raised because corporations owning vessel property locate what might be called nominal headquarters in suburban towns and thus escape taxes for sewer construction, street improvements and the like in the large cities. There is really no good reason why any city should tax even the vessel property belonging to its own citizens. In some parts of the Atlantic coast just now this subject is receiving considerable attention, and the Maritime Register of New York makes the very good point that a vessel, or the amount of capital which it represents, is employed anywhere and everywhere. It receives its life and protection from the national government. The earnings of vessel property can and should be taxed, however, as they belong to the town resident, who must pay his share of the protection and security that the town gives them. The more successful the vessel, which even on the lakes may be engaged largely out of the state, the better off will its owner be, and the more taxes will he pay into the local treasury through home investments resulting from the earnings of his vessel property in other places. No individual cases need be cited to show the force of this argument as regards hundreds of vessel men in lake cities who own real estate and have large manufacturing and mercantile interests.

Short History of Lake Navigation.

(By C. H. Keep, Secretary Lake Carriers' Association.)

EARLY HISTORY OF NAVIGATION ON LAKE SUPERIOR.

The commerce of Lake Superior was developed long after that on the lower lakes had become firmly established. It is better, therefore, to give a short account of its growth in a separate paragraph. For the following account the writer is indebted to Mr. J. T. Whiting, general agent Western Transit Company, Detroit, Mich. Mr. Whiting's connection with the Lake Superior trade goes back to its beginning and has continued to the present day. There is no one better qualified to speak of its every detail from personal observation. Mr. Whiting's history is given in his own words except in so far as his own personal connection with the early navigation is concerned.

Records and traditions (from both of which more or less is borrowed in preparing that portion of this article relating to incidents prior to 1843) indicate that Lake Superior was navigated from about 1800 by vessels owned by the late Hudson Bay and American Fur Companies.

A vessel named the Recovery, owned by the British Northwestern Company was one of those so employed. In the war of 1812, the parties owning the Recovery were fearful that she might be captured by the Americans, and history, well known to the older inhabitants of Lake Superior, tells us that she was placed in one of the deep narrow bays on the northwest end of Isle Royale, known as McCargos Cove, which was then under the control of the British government. Her spars were taken out, and her hull entirely covered over with branches of trees and brush wood. On the advent of peace she was brought from her hiding place refitted, and again put into commission, and in the year 1830, or thereabouts, she is said to have been run over the rapids at Sault Ste. Marie, and placed in the lumber trade on Lake Erie, under the command of Capt. John Fellows, of Fort Erie, Canada West. She was about 150 tons burden and brigantine rigged.

Another vessel named the Mink was also on Lake Superior before the war. She also was subsequently brought down over the rapids and employed in a general business during the balance of her life.

About 1834 the American Fur Company decided to build what was then termed a large vessel, for the navigation of Lake Superior. When built and completed, under the direction of Messrs. Ramsey Crooks and Oliver Newberry, she was placed in command of Capt. Charles C. Stanard, who, in years after, became a well known and very popular commander of steamers in the Buffalo, Detroit and Chicago trade. This vessel was named the John Jacob Astor, and was the first American vessel launched upon Lake Superior. Her timbers and plank were gotten out at Black River, Ohio in the fall of that year (1834) and were shipped to Sault Ste. Marie, and from there hauled (carted) across the Portage to the head of the rapids, where her keel was laid and the vessel launched about the 1st of August 1835. It was while in command of this vessel that Capt. Stanard discovered the well known rock afterwards named the Stanard rock, situated in Keweenaw bay, on which the United States government has since built, though attended with great cost and difficulty, one of its first class light-houses for the protection of all mariners and passengers that have occasion to navigate Lake Superior. Capt. Stanard remained master of the Astor until the season of 1842, after which Capt. J. B. Angus, a well known navigator of the lake, became master of her and remained in charge until she was wrecked at Copper Harbor some time in September, 1844, while landing a cargo of material to be used in building Fort Wilkins.

The American Fur Company built two smaller vessels in the years 1837 and 1838, one of which—owing to faulty construction—was never launched, while the other is supposed to have been put into commission, but her name, as well as her history, has been lost.

The schooner William Brewster, of about 70 tons, was launched in August, 1838, and in that fall, fearing she could not be kept profitably employed, she was run over the Sault rapids and afterwards engaged in the general business of the lakes. The timbers of the Brewster, like those of the Astor, were gotten out in Ohio, carried to Sault Ste. Marie, carted across the portage to the head of the rapids, where they were set up and the vessel finished.

TO BE CONTINUED.

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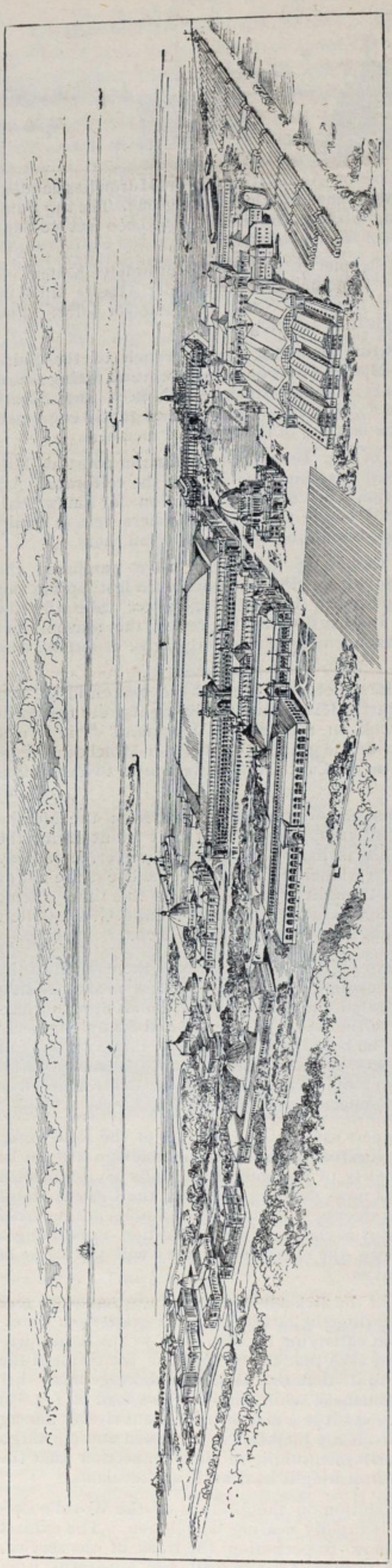
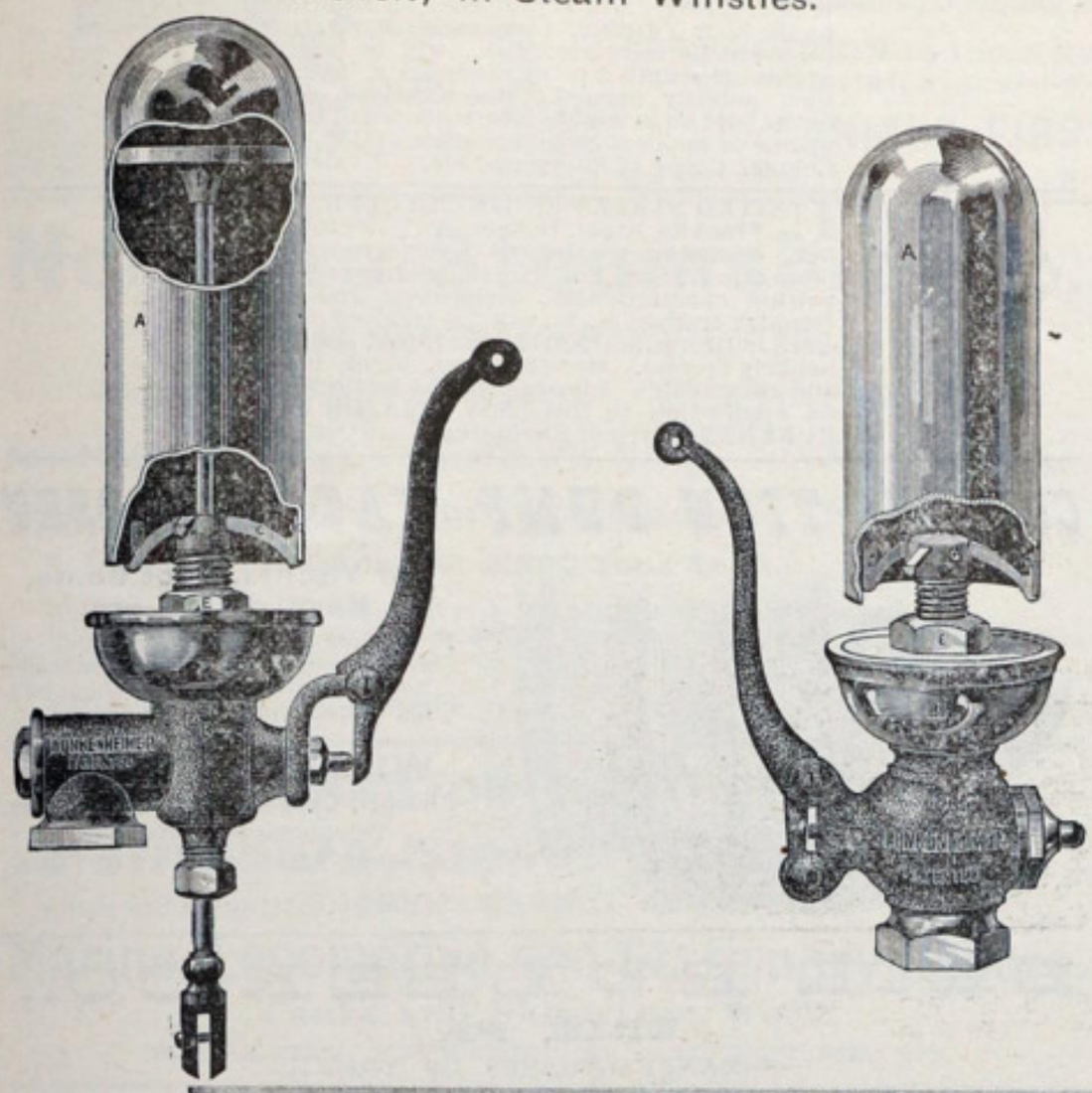


Birdseye View of the World's Fair Buildings.

Over 600 acres are occupied by the buildings shown by the illustration above. To the right are the structures devoted to agriculture, live stock, forestry, and dairy products. In the lagoon mentioned a large number of electric launches and gondolas will be operated. Extending 1,000 feet into the lake is the pier which affords a landing place for lake steamers. It also encloses a harbor. Suitable place for anchorage will be provided for yachts visiting the world's fair, Col. Rae of the Chicago yacht club having that matter in charge. The main building of transportation exhibit measures 960 feet front by 265 feet deep. In addition to this there will be a triangular annex covering about nine acres. This will contain exhibits too large for the main building. Near these is a large lagoon with an inlet to the lake. On a large island in this lake is the fisheries building, Across the lagoon is the government building, and east of this will be exhibited a gun battery, life saving station, a lighthouse, war balloon, and full size model of a battle ship. To the left are the structures devoted to agriculture, live stock, forestry, and dairy products. In the lagoon mentioned a large number of electric launches and gondolas will be operated. Extending 1,000 feet into the lake is the pier which affords a landing place for lake steamers. This will contain exhibits too large for the main building.

Novelty in Steam Whistles.



Two recent improvements in steam whistles are shown by the cuts above. The bell or dome of each is securely fastened at its lower end to a spider, the stem of which is threaded to admit being screwed into the base and secured by a jam nut. Through this construction the edge of the bell is always in line with the slot in the base, insuring a perfect, loud and clear tone. The prongs do not interfere with the sound. Figure 2 shows a combination alarm whistle, and could be used on lake steamers for a signal of distress. It is provided with a piston that can be moved up or down within the bell or tube, changing the length as well as the sound. When this piston is not operated the whistle gives the ordinary sound. The great advantage in both is that the tubes do not crack. They are patented, and manufactured by the Lunkenheimer Brass Manufacturing Company, Cincinnati.

Masts of the Great Eastern.

EDITOR MARINE REVIEW:—As a very young engineer it was my privilege to visit the Great Eastern many times during the successful voyages she made to Flushing bay, then at the western end of Long island sound, and now immediately opposite the Twenty-third ward of the city of New York. There was a yarn that her six masts were called after the six days of the week beginning with Sunday. But the real names of them were fore trysail mast, foremast, mainmast, after mainmast, mizzen mast and jigger mast.

MATTHEW MERCEDES.

Chicago, Oct. 3, 1892.

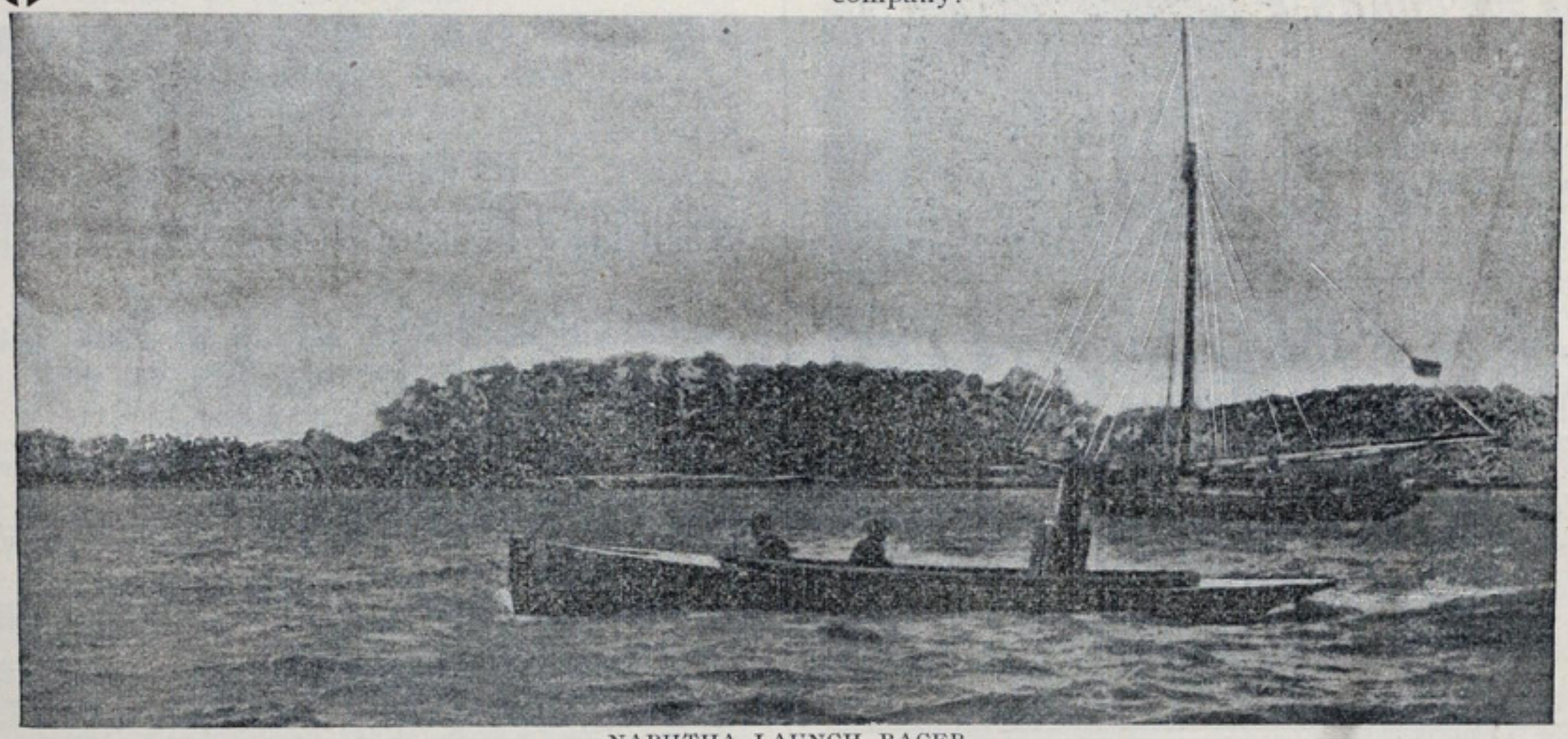
[Matthew Mercedes, the signature appearing here is assumed. The writer is one of the leading naval engineers of this country.]

District Superintendent Chapman.

In the appointment of Capt. Chapman, of the Oswego life saving station, to the position of superintendent of the ninth life saving district, General Superintendent Kimball made an important move in the direction of encouragement to the service generally on the lakes. Capt. Chapman began as a surfman, and has been in the service fifteen years. In other matters pertaining to the lakes the executive officers of this service have not been acting very satisfactorily. It has been understood among lake vessel owners that for more than two years past funds have been available for life saving stations at Niagara and Ashtabula. The station at Ashtabula, where the commerce is third in importance on Lake Erie, has been neglected on the claim that a proper site can not be secured. At Niagara it is now said that work will begin next year, but promises of this kind regarding both stations have been very numerous since they were made.

Fastest Boat of Her Size in the World.

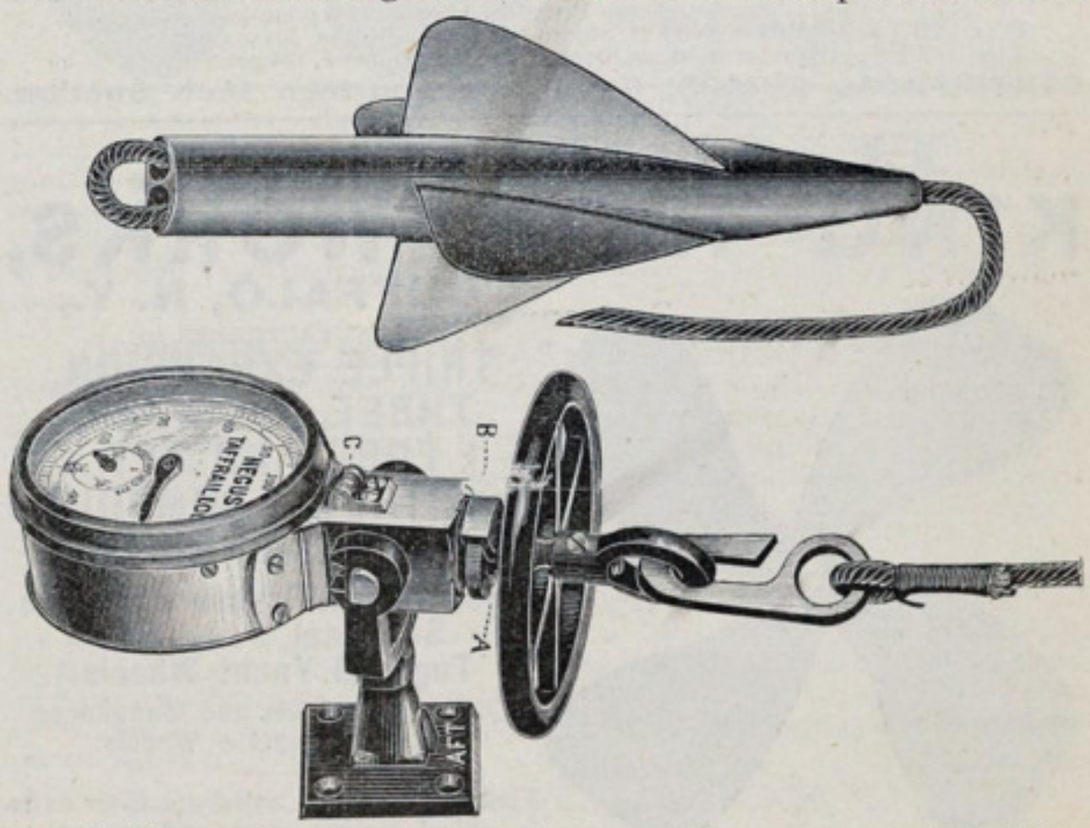
Below will be found an illustration of the Racer, kept in readiness at the storage basin and works of the Gas Engine and Power Company, Morris Heights, New York, for a trial of speed with any boat of her size afloat. She is 30 feet long, narrow and light and has a six horse power motor. There is no doubt that naphtha launches are the most convenient pleasure boats built. No engineer is required and the cost of fuel is very small. Illustrations of different styles will be mailed on application to the company.



NAPHTHA LAUNCH RACER.

New Taffrail Log.

Herewith is shown illustrations of the Negus improved log. The main shaft bearings are in two sets and composed of hard



steel balls running in cones and cups of the same material. This causes the friction to remain the same in the log whether it is old or new. It does not stop for a time and spin off rapidly.

MARINE REVIEW LINER EXCHANGE.

Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind or wishing to purchase vessels, are invited to take advantage of the same offer. Employers in need of professional men or men who want positions may avail themselves of the opportunities offered. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 516 Perry-Payne Building, Cleveland, O.

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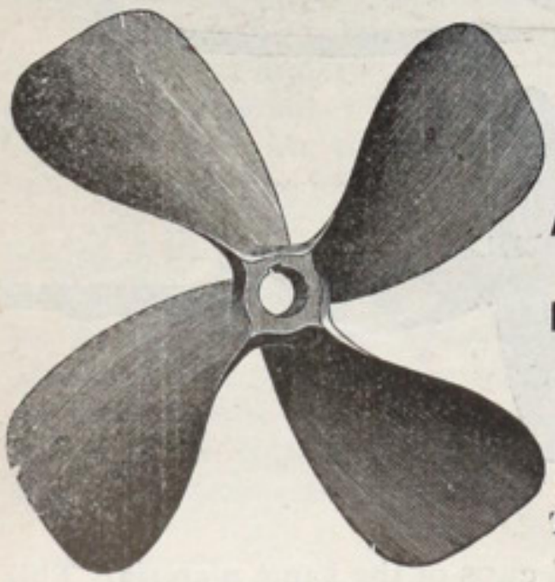

These Wheels are noted for their extra speed, towing power and proportionate saving of coal.
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UNITED STATES ENGINEER OFFICE, 34 West Congress street, Detroit, Mich., September 8, 1892. Sealed proposals for furnishing by the hour 1 dredge, 1 tug and 2 dump scows, for use at Detroit river, Mich., will be received at this office until 2 p. m., October 8, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office. O. M. POE, Colonel, Corps of Engineers, etc. Oct. 6.

UNITED STATES ENGINEER OFFICE, 121 Franklin street, Buffalo, N. Y., October 1, 1892. Sealed proposals for (1) Extension of north pier, Erie Harbor, Pa. (2) Rebuilding and repairing superstructure, breakwater and pier, Dunkirk Harbor, N. Y., will be received at this office until 2 p. m., November 1, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office MAJOR E. H. RUFFNER, Corps of Engineers. Oct. 20.

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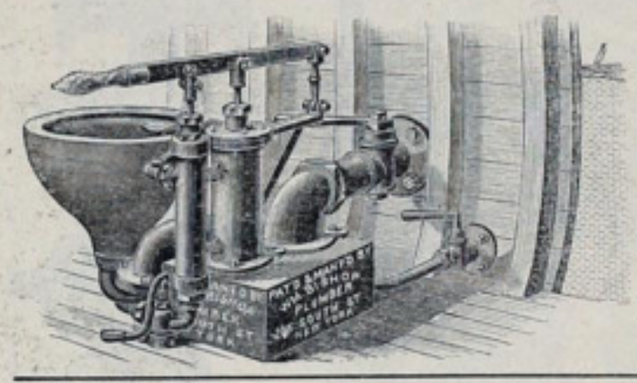

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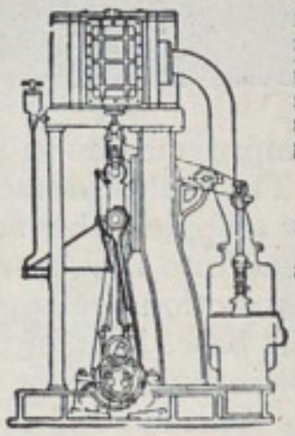

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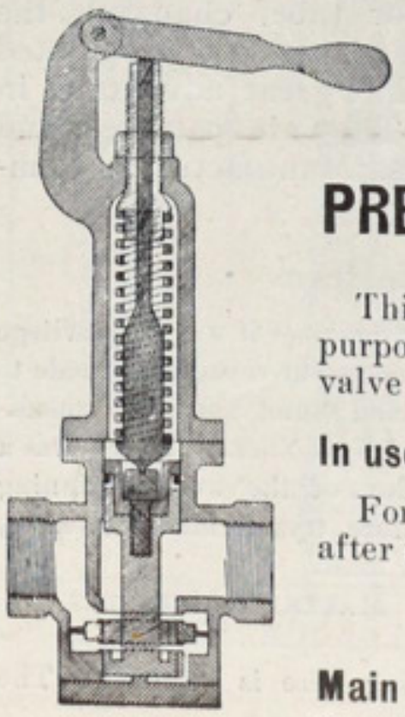

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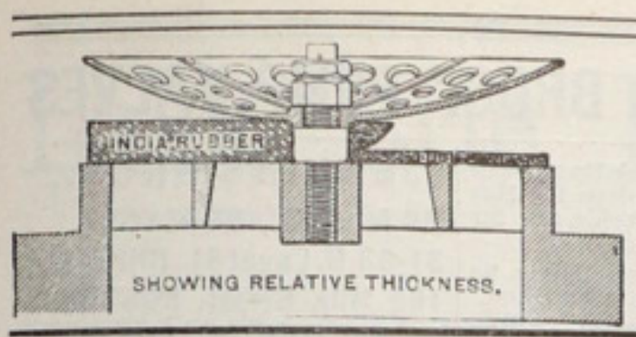

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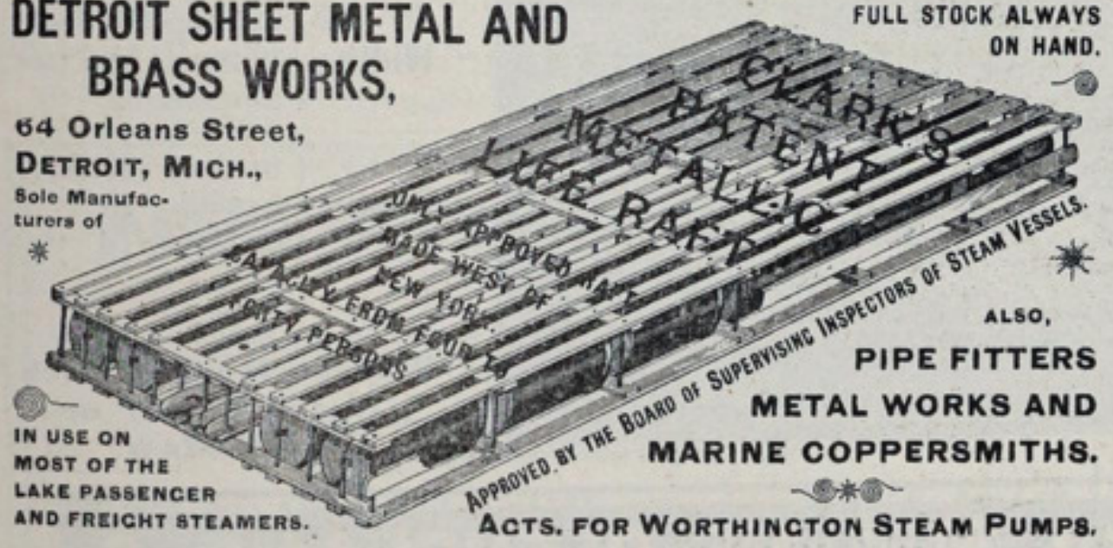

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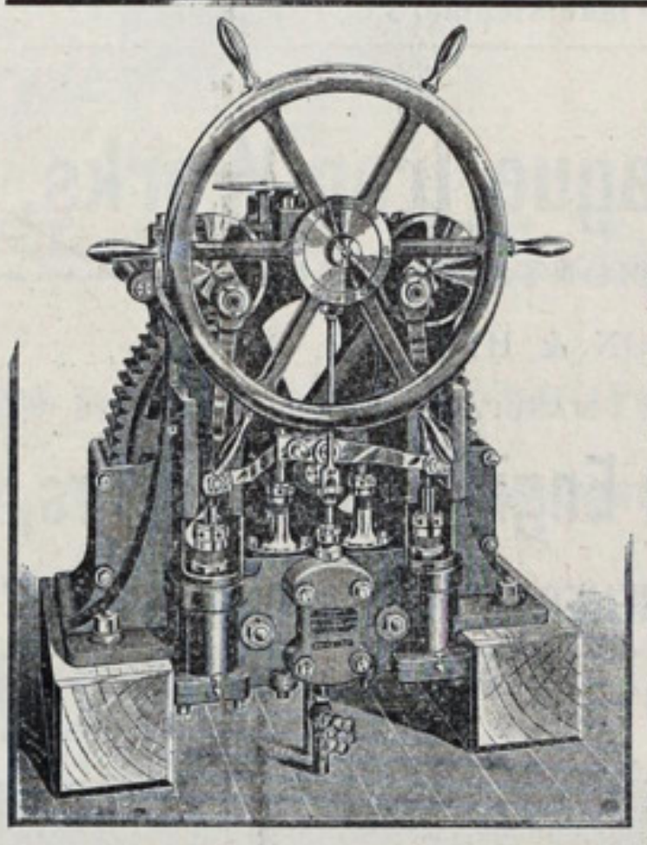

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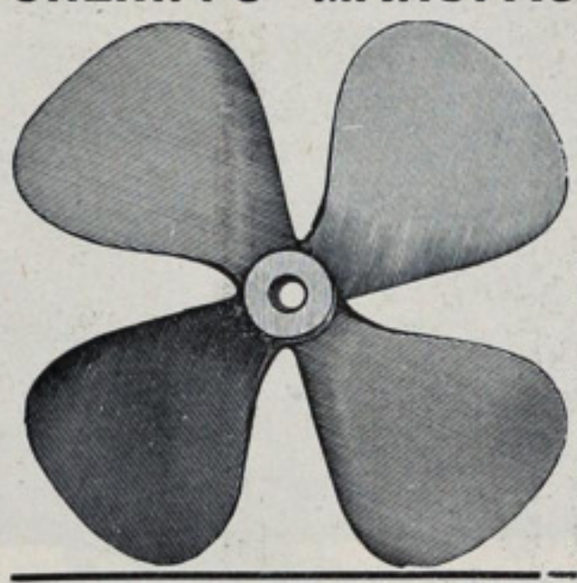

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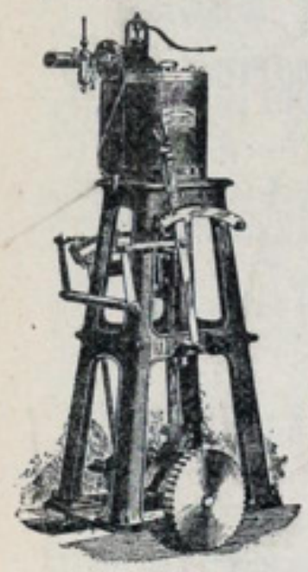

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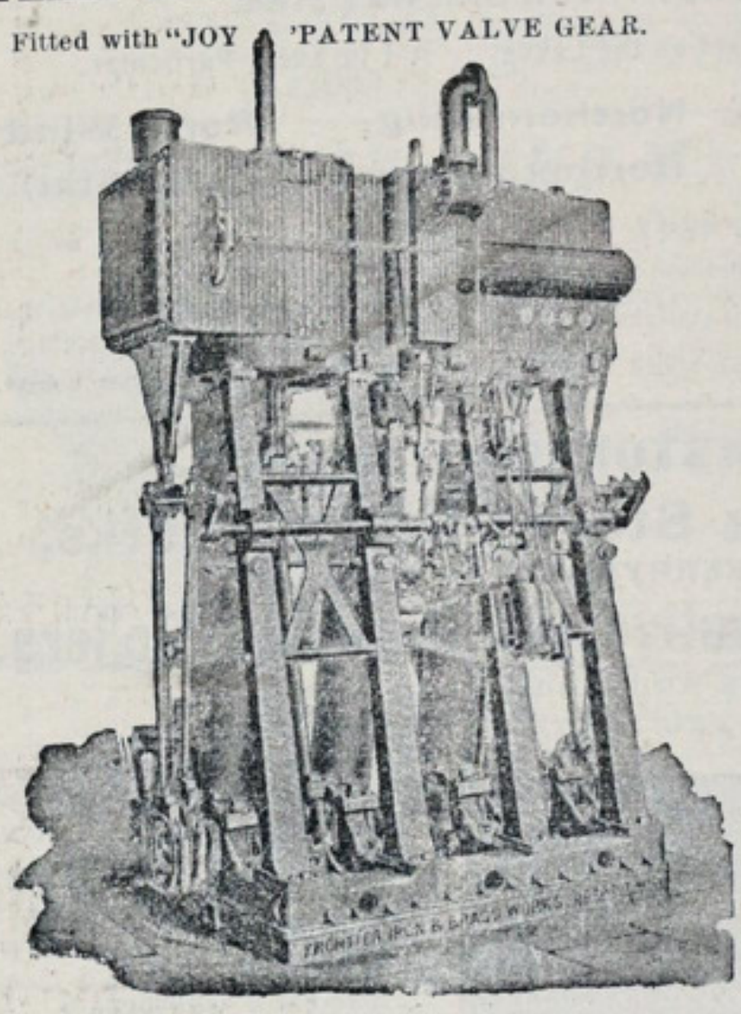

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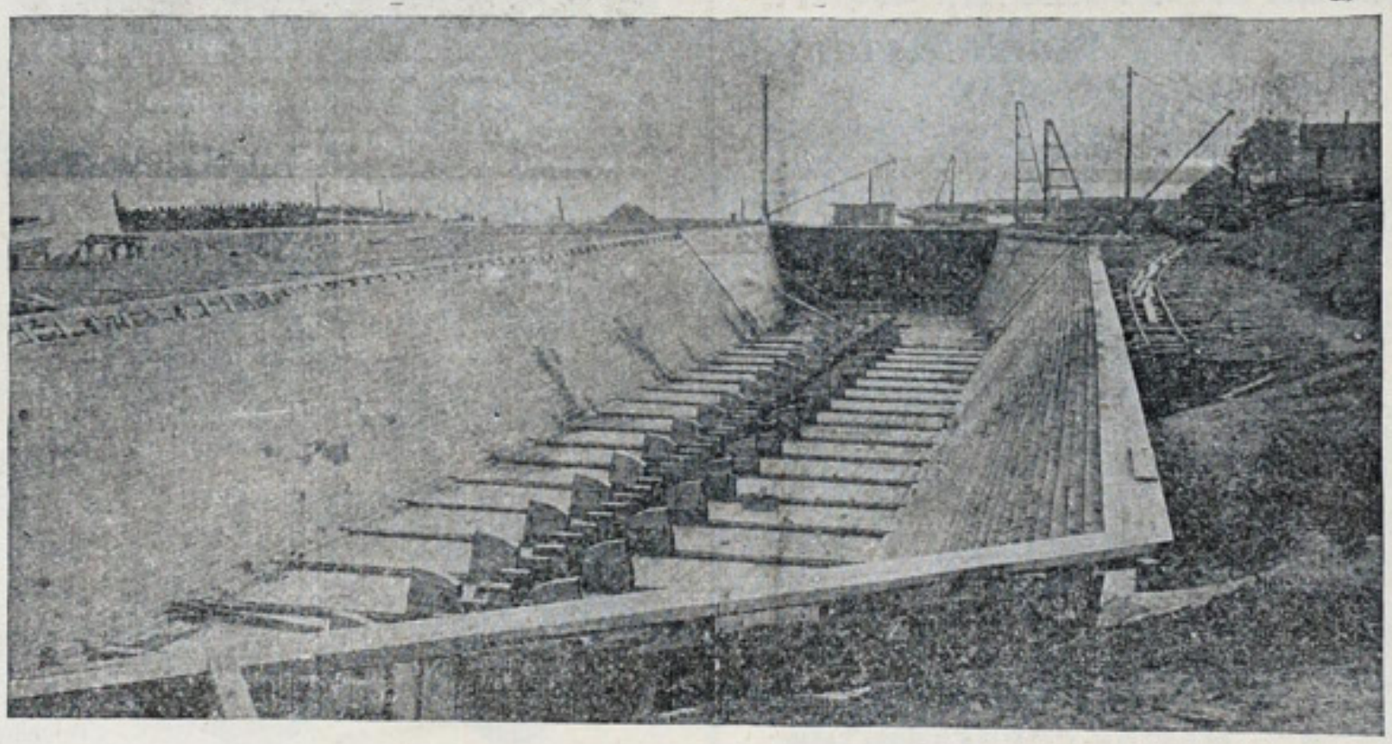

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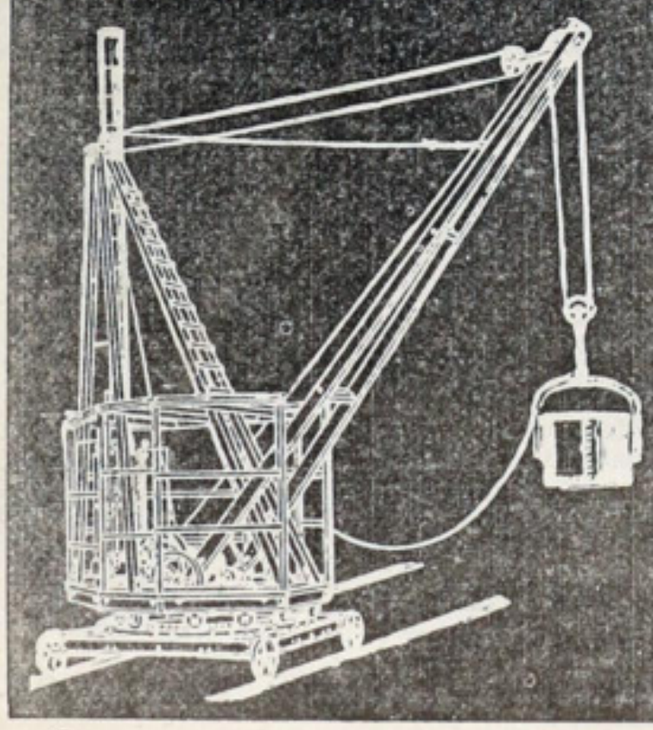

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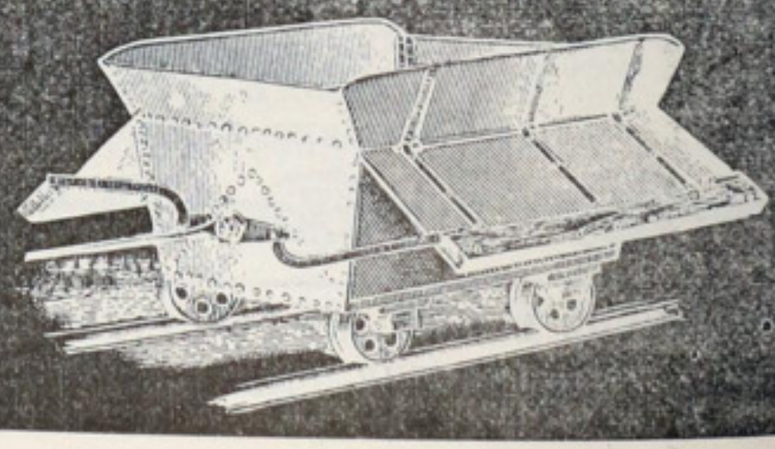

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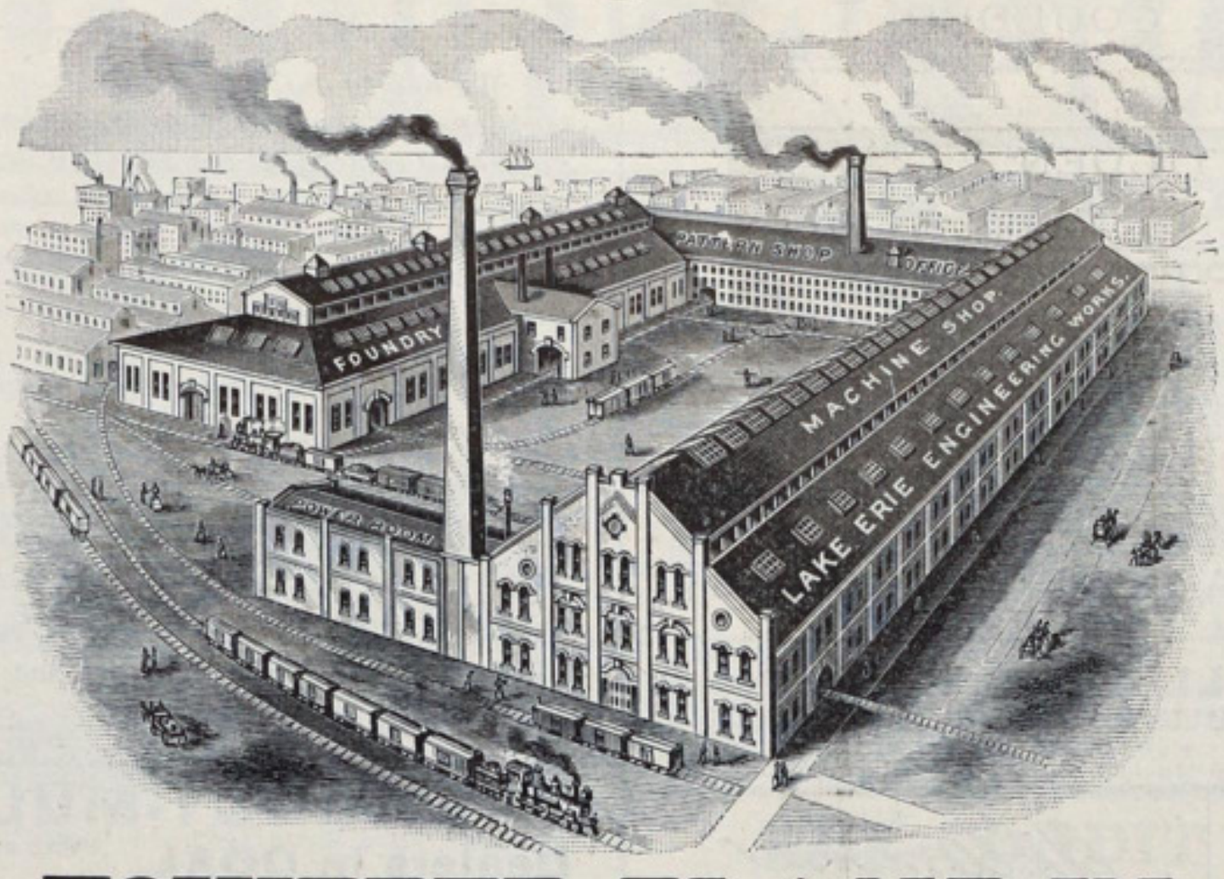

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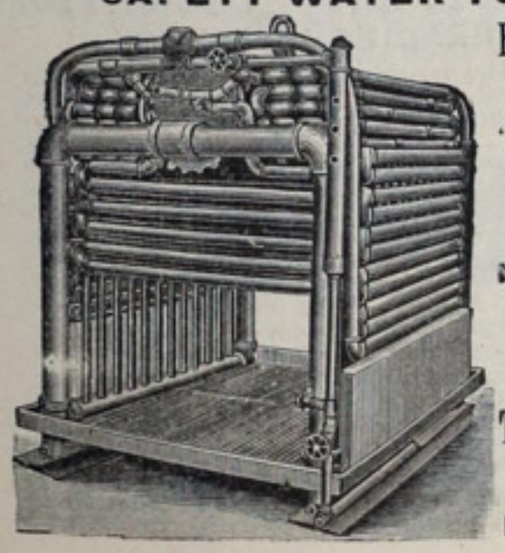

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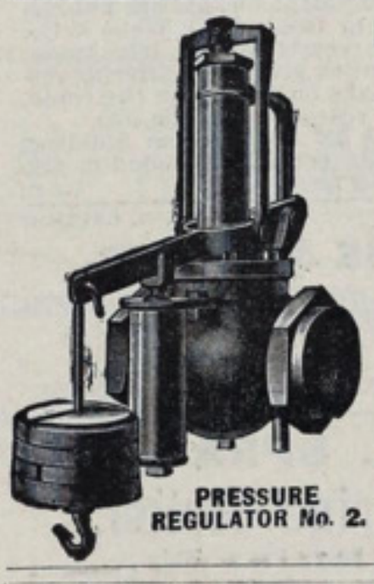

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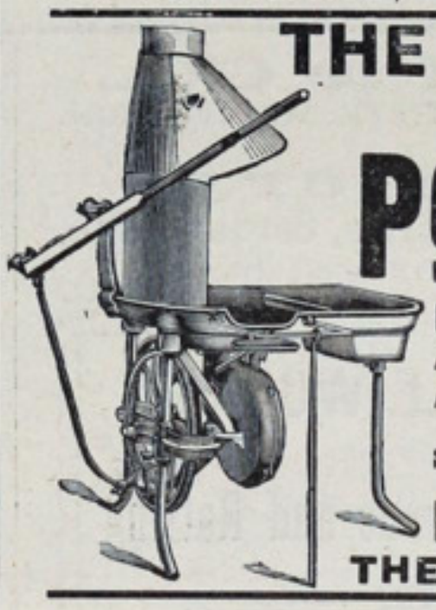

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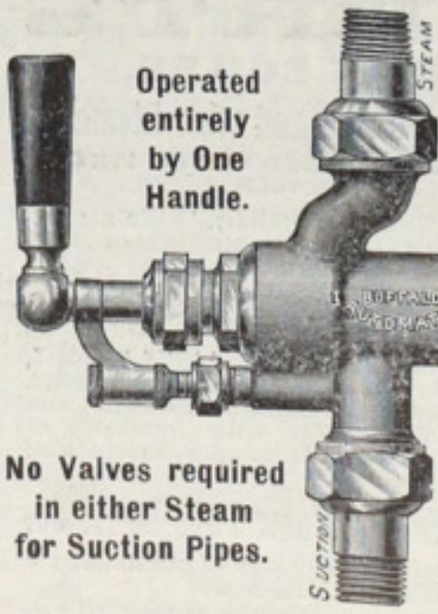

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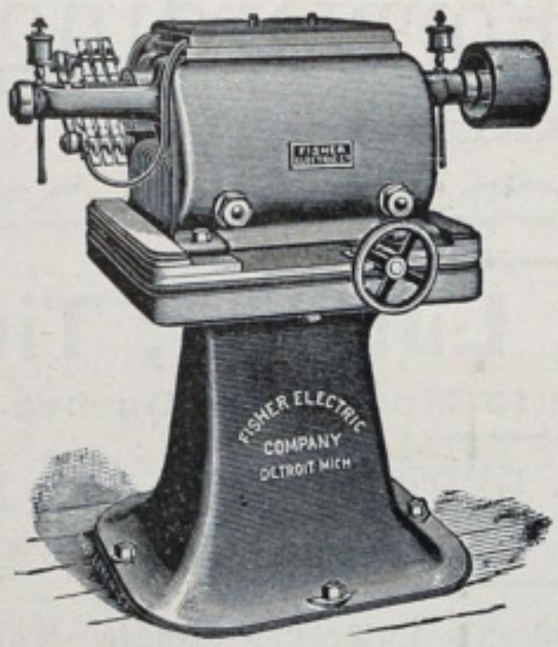

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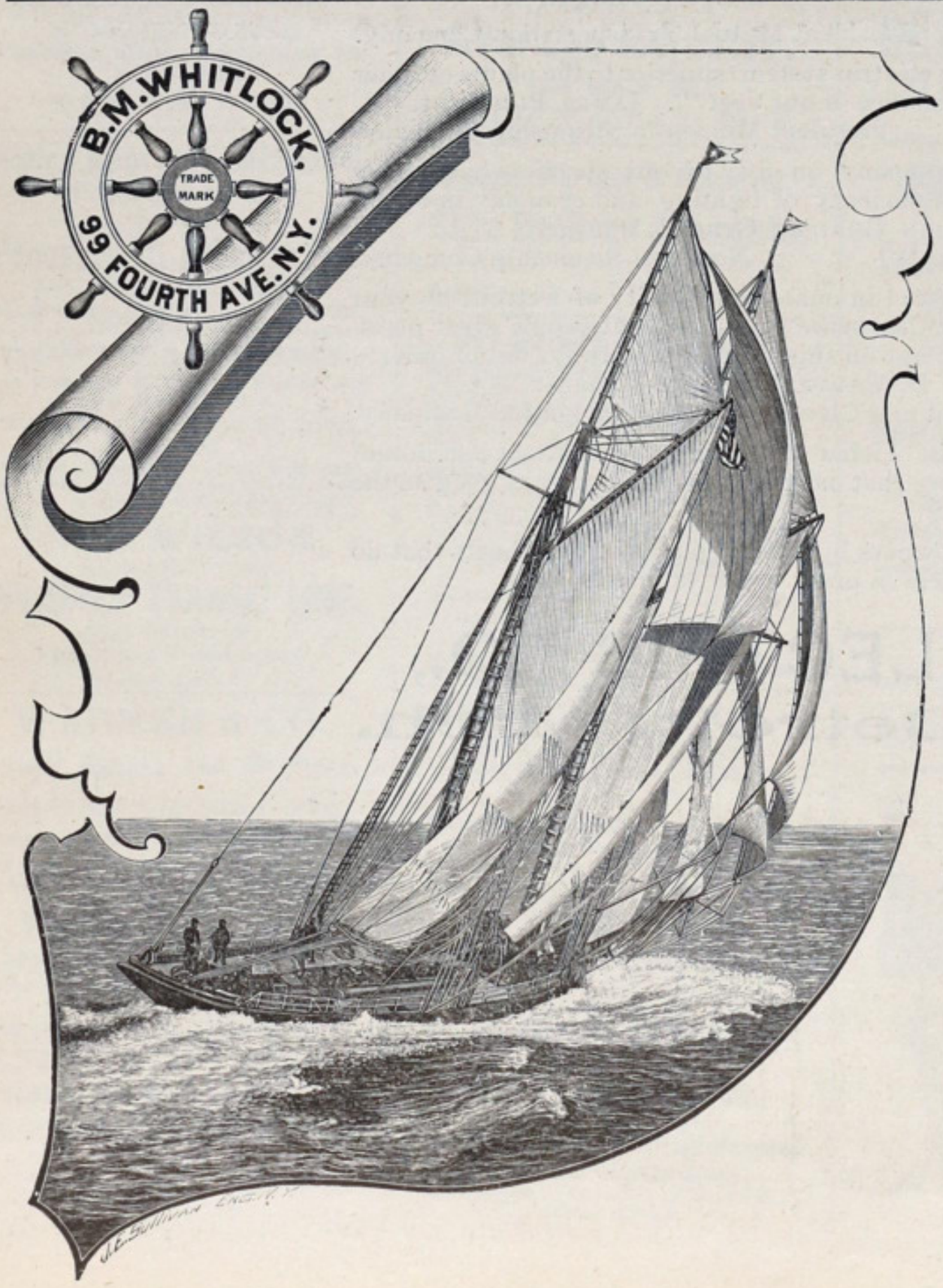

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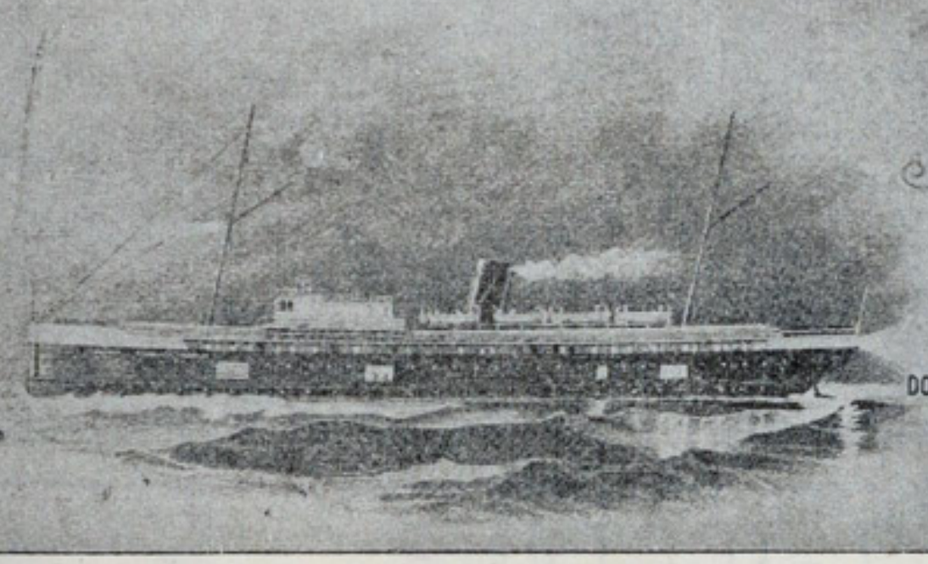

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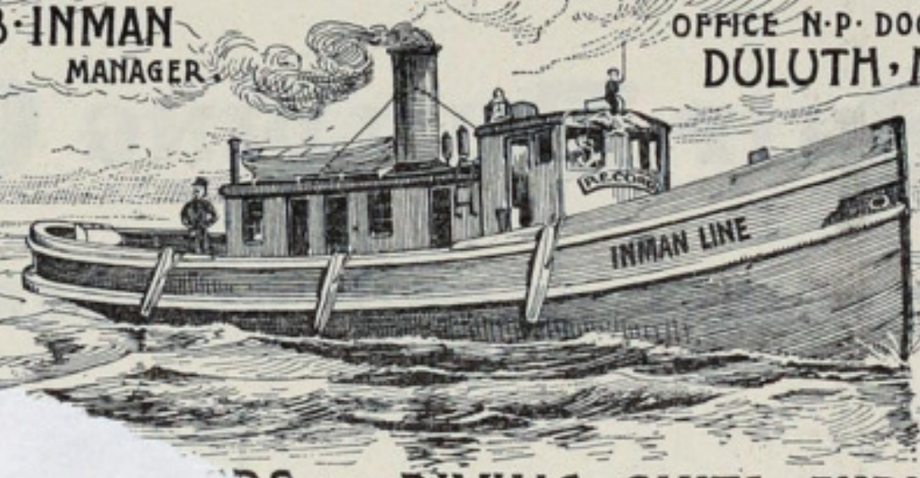

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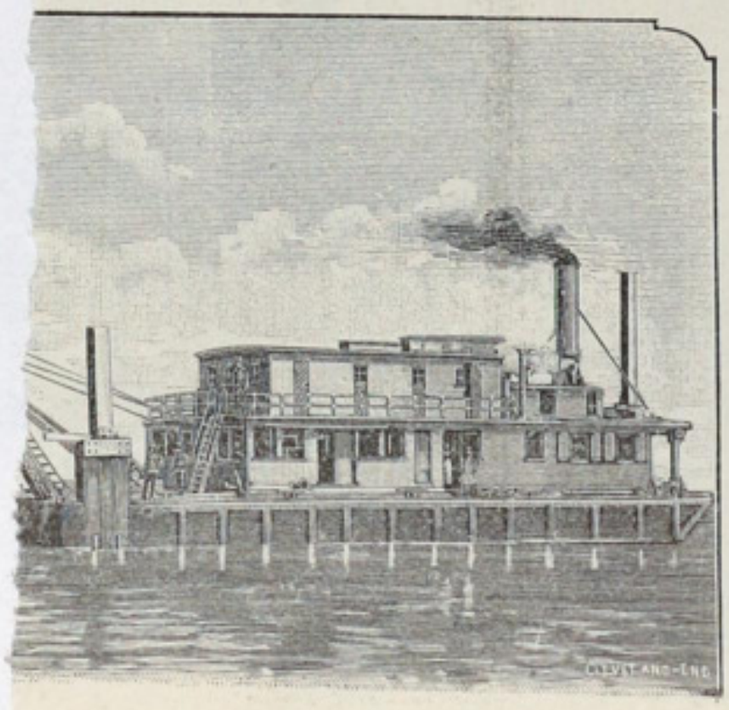

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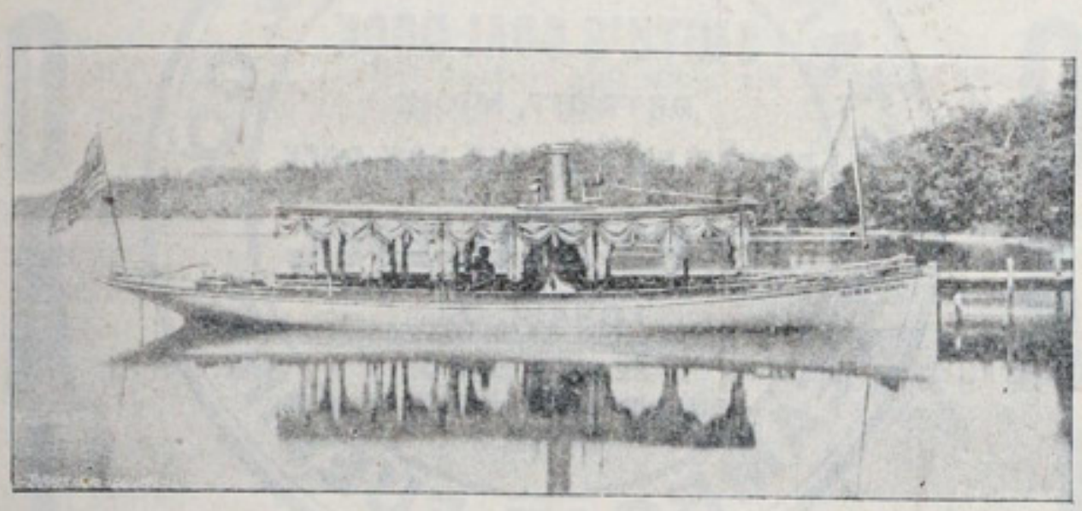

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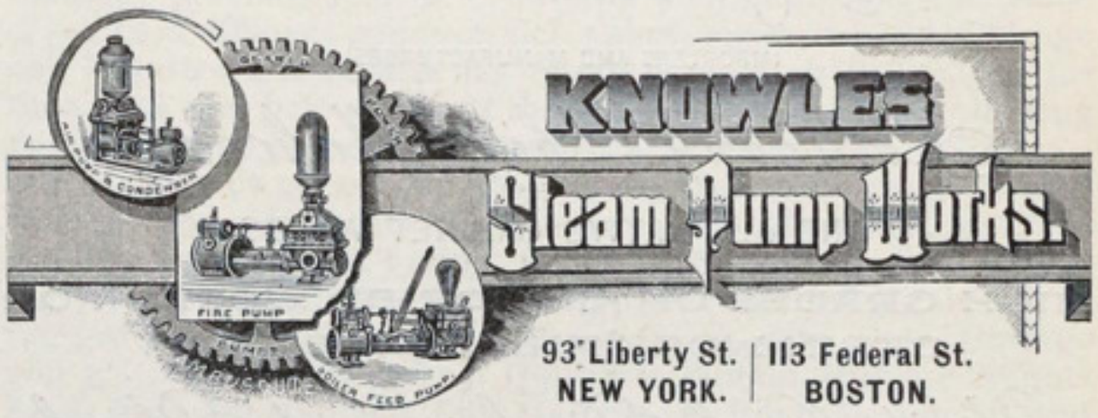

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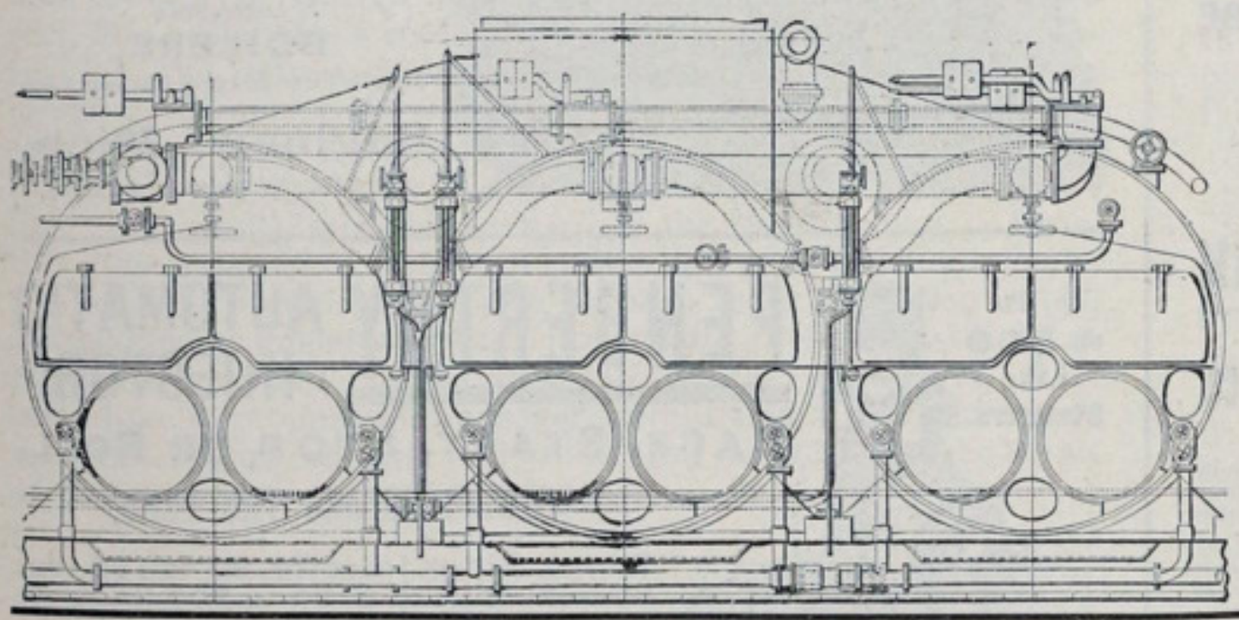

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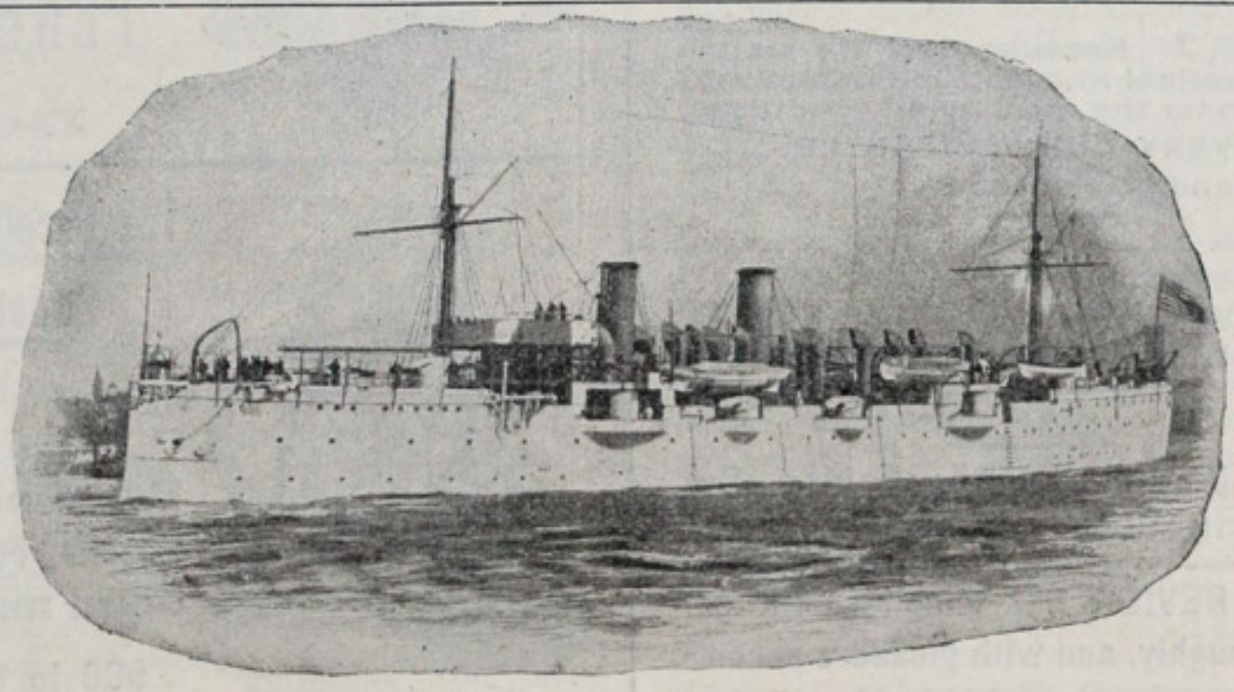

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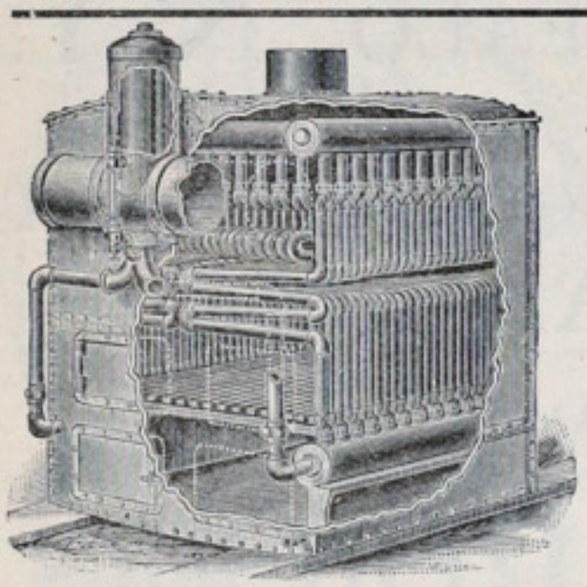

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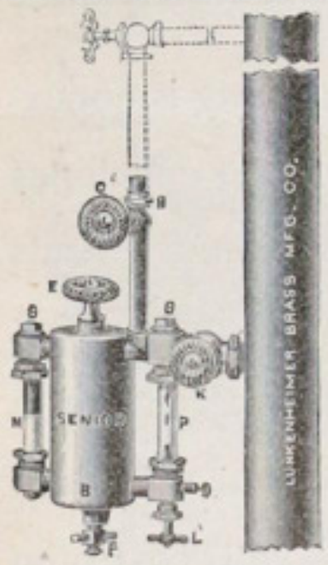

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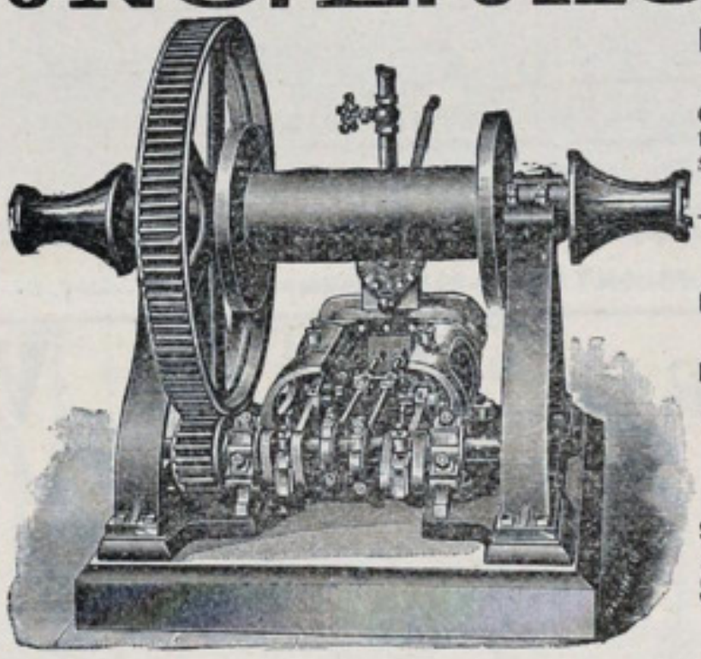

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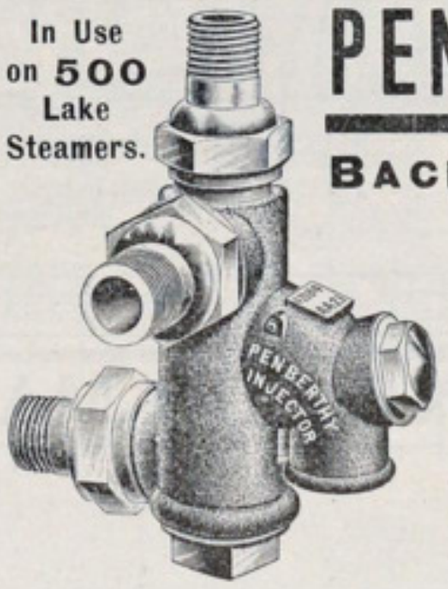

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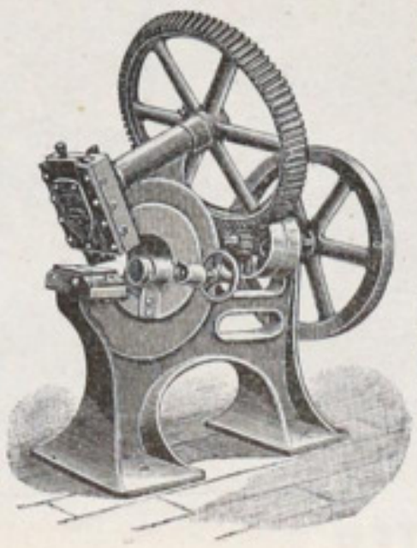

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